What Supervisors Now Want From Management

September 9, 1957

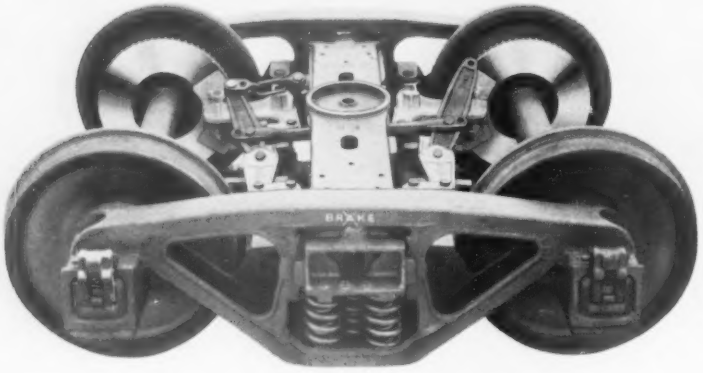
RAILWAY AGE *weekly*

Carriers put spotlight on tank car journals ↑

HOW CNR TRAINS Middle Management

50 cents A Simmons-Boardman TIME-SAVER Publication

BACK TO CHICAGO...



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In June 1956 the first freight car equipped with Single Disc Mechanical Brake-X Trucks to go into regular service, was shown by New York Central System at La Salle Street Station in Chicago. Now — after 15 months of continuous, high speed service, one of these Brake-X Trucks will be removed from the car for your inspection at the Allied Convention in Chicago, Sept. 16-17-18. This will be one exhibit you cannot afford to miss. EXHIBIT SPACE 240-1-2-3 and 290.

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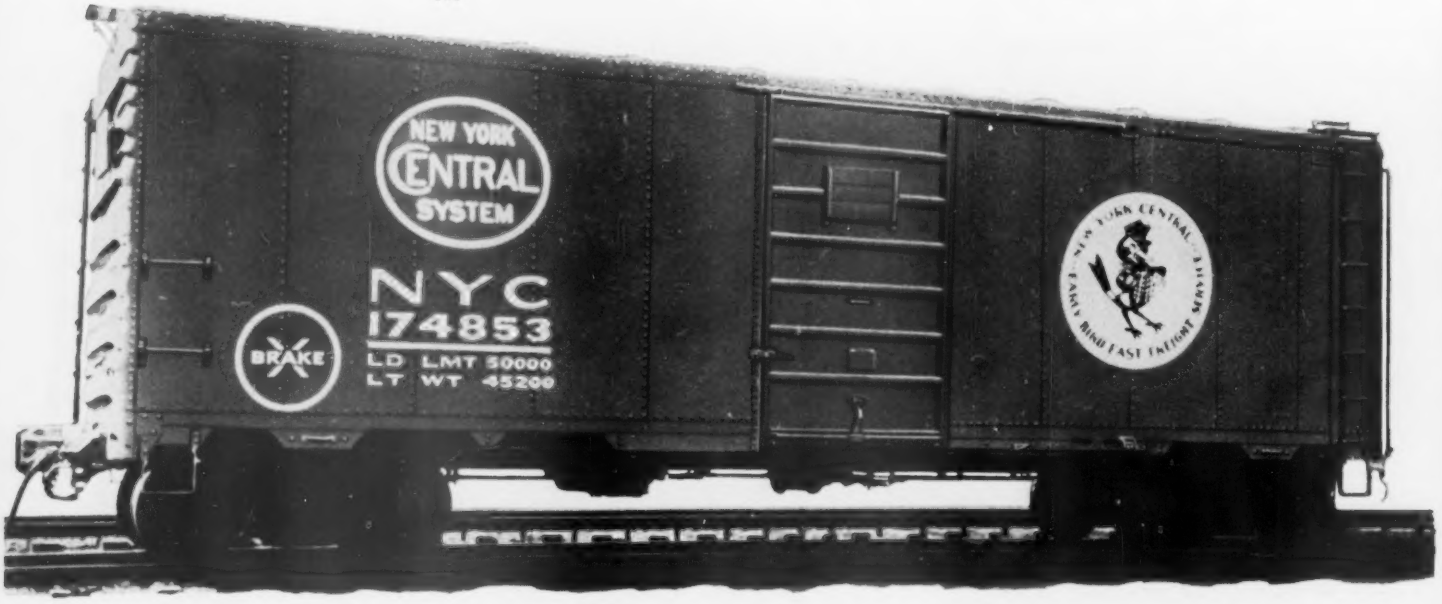
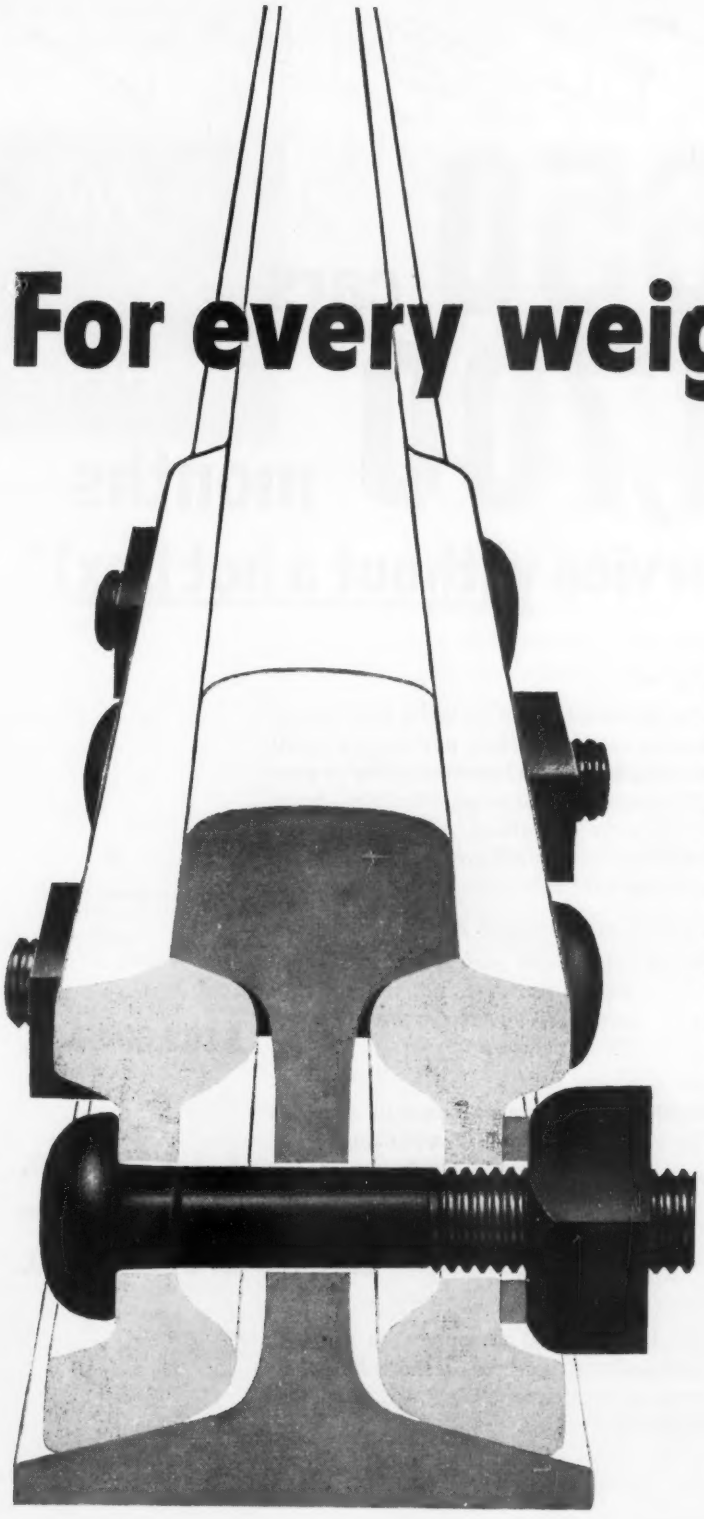


For every weight of rail



Bethlehem track bolts are made in sizes to meet every main line and secondary requirement. They're good, sound bolts, too. They are furnished with strong oval necks and rolled threads, and have well-formed square nuts for firm wrench-grip. Drop a line to us about your requirements.

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of service without a hot box!*

*That's the record rolled up using R-S journal stops and roll-type waste packing on 1,650 Frisco freight cars! On home rails, they've gone 21,700 months without a single hot box—proof that, properly contained, A.A.R. Approved Journal Box Packing will give long, economical, trouble-free service.

And look at the savings. As an example:

2,000,000	Freight cars packed with substitutes such as pads, etc., not yet proved *in service*, @ an average price of about $50.00 per car set	**$100,000,000.**
2,000,000	Freight cars packed with approved A.A.R. Journal Box Packing @ approximately $4.90 per car set	**$ 9,800,000.**
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It all adds up to real economy when you stick to tried-and-true measures. In short, there is no economical replacement for A.A.R. Approved Journal Box Packing.

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RAILWAY AGE *weekly* September 9, 1957 • Vol. 143, No. 11

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Congress set transport law 'record' ..... p. 9

The just adjourned Congressional session set something of a mark for transport legislation, having brought final action on nine of the 26 matters covered in legislative recommendations of the ICC's annual report. One enactment of interest to railroads is a fourth-section amendment which limits the commission's authority with respect to the long-and-short-haul clause to the granting of relief over direct routes.

Union shop talks deadlocked p.15

Month-long discussions between the Santa Fe and 15 non-operating unions on the latter's demand for a union shop have ended with no agreement and a report that the unions are taking a strike vote. Decision on the proposed walkout may be known late this month. The unions, Santa Fe charges, rejected a compromise offer, "insisting upon compliance without change in their demands."

Tilford hails L&N-NC&StL merger p.18

"More and better service under one management" will follow from the merger of the Nashville, Chattanooga & St. Louis with the Louisville & Nashville, says John E. Tilford, L&N president. The merger, which became effective August 30, should mean that additional improvements can be made, he added, "which will increase traffic movement with a fuller use of the transportation capacity."

How CNR trains middle management p.24

The Canadian National's staff school program—unique among railways on this continent—has just ended its fifth successful session. The program was set up to provide management with full information about likely candidates for promotion and to give such candidates instruction and impetus to move them forward in the desired direction.

Carriers put spotlight on tank car journals p.28

Sharp reductions in the incidence of hot boxes on tank cars have followed formation of several joint committees, representing railroads and private car owners, that were set up specifically to deal with the problem. The committees emphasize use of proper equipment, such as modern bearings and lubricators, and make sure that the equipment is properly serviced and maintained.

Bonus plan's aim: 'Team effort' p.30

If the Chicago & North Western's gross freight revenues exceed a predetermined mark this year, all traffic department personnel, from chief clerk up, will get a bonus. Participants will

Where did you see him?

Easy. Just a while back, he appeared in one of our national magazine advertisements. We said he was a "fast worker." Know why? Because he's got The Hertz Idea!

Instead of wasting time on business trips, he goes the fast, comfortable way—by train. Then, at his destination, he rents a Hertz car—a bright, new Powerglide Chevrolet Bel Air or other fine car.

One reason more people are combining rail and auto travel is our advertising. We encourage readers to take the train—and have a Hertz car waiting. And with "Rent it here . . . Leave it there" nationwide at no extra charge (Between Hertz cities on rentals of $25 or more. For Chevrolet Sedans and comparable models only.), your passengers can leave the car in another Hertz city and continue by train. This means more satisfied passengers—more *repeat* business!

Your ticket agents figure in this, too. For every Hertz car reservation they make, they get a 10% commission on the total rental fee. Besides this, terminals all over the country have Hertz counters or direct "Call a Car" phones.

How can you help? Mention the idea of renting a car in your advertising! For more information and free promotional materials write: Hertz Rent A Car, 218 South Wabash Avenue, Chicago 4, Illinois.

More people by far...use

HERTZ

Rent a car

Week at a Glance CONT.

receive their shares of revenue earned in excess of the bonus base in direct ratio to their annual salaries.

What supervisors now want from management.....p.37

It is through the supervision that the policies, objectives and procedures of a company are communicated to the employees. What supervisors require from management to make this communication effective will be detailed at the forthcoming Chicago annual convention of the American Railway Bridge & Building Association.

RRs swing to 'general promotion' ads p.45

More emphasis, and more money, is going into advertising campaigns that tell the public of railroad progress. The significance of the new railroad stress on general promotion is that it provides an important clue on how management may invest future advertising dollars.

How are they doing on the Pittsburgh & West Virginia?.....p.59

Here's why the railroad views the future with undisguised optimism, even in a year when railroad business generally is faced with spiraling costs and sagging net. The road may wind up 1957 with the best net-to-gross ratio, and its top per-share earnings, since 1950.

Automation—Key to prosperity p.82

The future of the railroads depends on the degree to which they go forward with automation, which, in essence, means producing more units of product per hour of labor. All that's wrong about automation on railroads is that there isn't even more of it going on than there is.

COMING NEXT WEEK: A special report on the growing use of prefabricated buildings in the railroad industry.

Short and Significant

"Marden method" freight car weighing . . .

is scheduled for a demonstration soon at the Monon's yard in Hammond, Ind. A spokesman for International Railroad's Weighing Corporation at Indianapolis, said the demonstration date may be set at a meeting this week. The Marden method involves two-draft weighing of coupled moving cars.

Definite word on new rate increase . . .

is not likely to result from traffic association meetings September 19-20 in Chicago. The Western Executive Committee is slated to confer the 19th, then meet with Eastern and Southern groups the following day. One observer's forecast: Discussions and studies have not firmed up enough yet to make a decision possible.

Current Statistics

Operating revenues, six months	
1957	$5,233,825,887
1956	5,236,344,953
Operating expenses, six months	
1957	$4,110,382,393
1956	4,037,305,569
Taxes, six months	
1957	$541,759,233
1956	558,823,136
Net railway operating income, six months	
1957	$450,303,531
1956	511,593,738
Net income estimated, six months	
1957	$345,000,000
1956	404,000,000
Average price 20 railroad stocks	
September 3, 1957	86.21
September 4, 1956	98.31
Carloadings revenue freight	
Thirty-four weeks, 1957	23,539,563
Thirty-four weeks, 1956	24,241,180
Average daily freight car surplus	
Wk. ended Aug. 24, 1957	13,565
Wk. ended Aug. 25, 1956	6,597
Average daily freight car shortage	
Wk. ended Aug. 24, 1957	2,448
Wk. ended Aug. 25, 1956	8,432
Freight cars on order	
August 1, 1957	85,229
August 1, 1956	126,194
Freight cars delivered	
Seven months, 1957	59,136
Seven months, 1956	38,533

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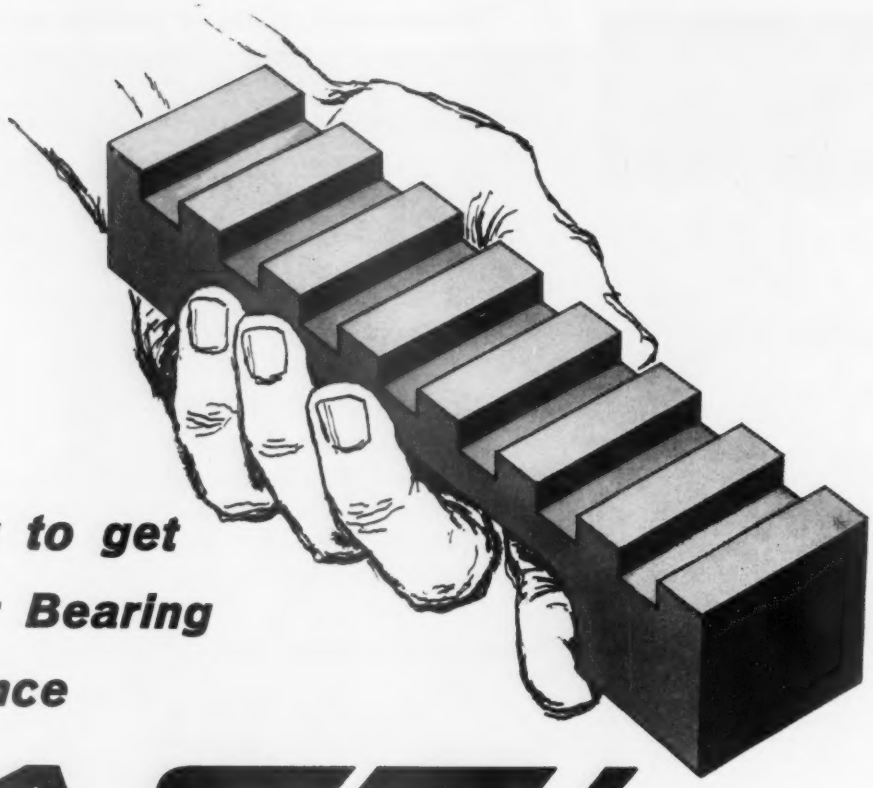

Surest way to get Better Bearing Performance

FAST!

Railroads have accumulated 30,000 car-months of service with R-S JOURNAL STOPS — and have averaged better than 6,000,000 car-miles per set-out

MAGNUS R-S Journal Stops, bolted to the inside of the box, on either side of the journal, positively prevent excessive axle displacement even under the severest road or switching impacts. All elements of the bearing assembly are kept *in place, all the time!* You maintain a constant hydrodynamic oil film that guarantees optimum journal bearing performance.

Magnus R-S Journal Stops are now installed on more than 2,600 cars which have accumulated more than 30,000 car months of service. In this time there have been only six road failures. That's equivalent to better than 6,000,000 car miles between set-outs. You can't beat that kind of performance with any other type of freight car bearing — or any other journal bearing device.

For full information on R-S Journal Stops, write to Magnus Metal Corporation, 111 Broadway, New York 6; or 80 E. Jackson Blvd., Chicago 4.

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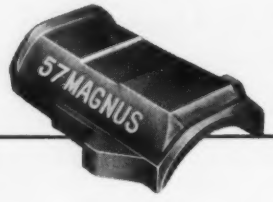
Solid Bearings



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RAILWAY AGE
The Industry's Newsweekly

Congress Set Transport Law 'Record'

Amendments to Sections 4 and 22 of the Interstate Commerce Act were of principal interest to railroads—Action taken on nine of 26 matters covered in ICC legislative recommendations.

Amendments to Sections 4 and 22 of the Interstate Commerce Act comprised the adjourned Congressional session's principal enactments of interest to the railroads.

The fourth-section amendment is a tariff simplifier which limits the ICC's authority with respect to the long-and-short-haul clause to the granting of relief over direct routes. The Section 22 amendment includes provisions making it clear that special rates accorded government agencies (so-called Section 22 quotations) qualify for the anti-trust clearance which Section 5a confers on carrier rate-making procedures.

The session set something of a record for transport legislation, having brought final action on nine of the 26 matters covered in legislative recommendations of the ICC's annual report. That's a "batting average" of better than 300, the commission's best yet—and good in any league even though it did include "hits" of the scratch variety in that the commission in some instances got less than it recommended.

Speaking last week at a Washington meeting sponsored by the Transportation Association of America, Commissioner Minor put the new definition of contract trucking (Railway Age, Sept. 2, p. 12) at the top of his list of the session's more important enactments. Next, in turn, he listed the amendments to Sections 4 and 22.

The change in the fourth section permits carriers with indirect routes to meet the competition of direct routes without prior commission approval of rates involving departures from requirements of the long-and-short-haul clause—provided such rates meet standards laid down in other sections of the act. The amendment was supported by the railroads and shipper interests, including the National Industrial Traffic League.

The Section 5a provision of the Section 22 amendment was added after a federal district court had ruled that "concerted" Section 22 quotations are not covered by Section 5a and are thus subject to anti-trust laws. The ruling came in a case involving complaints of airlines against practices whereby railroads quote rates to the Department of Defense for troop movements (Railway Age, Aug. 5, p. 15).

The provision stipulates that it will not affect any court action instituted prior to the enactment date. The bill was signed by President Eisenhower August 31, but meanwhile a second air-line complaint had been filed against the railroads (Railway Age, Sept. 2, p. 15).

Other provisions of the Section 22 amendment call for submission of Section 22 quotations to the ICC, where they shall be open to public inspection—except in cases where national security might be involved. Here the commission got somewhat less than it sought, which was to end special rates for government agencies except in time of war or national emergency, and to preclude the filing by the government of complaints assailing section 22 quotations.

Commissioner Minor, at the TAA meeting, said that he did not expect the commission to renew the latter recommendation in its next annual report. He went on to explain that the commission considers the filing requirement a "step in the

ACF Trailer Hitch in Chicago & North Western Service

Railroad and trucking officers watch as an ACF Industries' retractable trailer hitch is raised into position under the first truck trailer loaded for the Chicago to St. Paul-Minneapolis piggyback service recently inaugurated by the Chicago & North Western. Left to right are T. L. Norton, C&NW traffic vice-president; Eugene F. Ryan, Rail-Trailer Company president, and (at extreme right), Henry Wynberg, treasurer, Illinois-Minnesota Motor Carriers' Conference. Trailer hitch, a piggyback tie-down device, is a product of ACF's American Car & Foundry division.

right direction" in that it affords opportunity to study Section 22 quotations and their effect on other rates.

The other six enactments on matters covered in commission recommendations were these:

The Section 20b amendment which adds provisions under which controlled or controlling stockholders of a railroad undergoing voluntary reorganization may be permitted to vote on the revamp plan.

The increased fines for railroad violations of the Safety Appliance, Hours of Service and Locomotive Inspection acts; and for motor carrier violations of ICC safety regulations and indulgence in unlawful practices such as rebating.

The tightened permit requirements applicable to forwarders generally but exempting railroad-controlled forwarders.

The Section 218 amendment which requires contract truckers to file their actual (instead of minimum) rates with the commission.

The Section 214 amendment to prevent use by motor carriers of an arbitrary par value to evade commission jurisdiction over issuance of capital stock.

The amendment to the Medals of Honor Act which provides awards for heroism in connection with accidents on highways.

The commission's success in the session was attributed in large part to its plan of submitting drafts of bills to implement its legislative recommendations. In previous years, the recommendations were submitted alone.

One of the 26 legislative recommendations was withdrawn after the United States Supreme Court decided the issue in favor of the commission. The recommendation proposed that the act be amended to make it clear that the commission has power to grant temporary operating authority to motor carriers and water carriers for periods of more than 180 days. The holding of the Supreme Court was that the commission now has such power (Railway Age, June 10, p. 11).

The other 16 commission recommendations remain alive since the adjourned session did not end the 85th Congress. In the absence of special sessions, its next and final session will begin January 7, 1958.

These 16 recommendations include proposals more controversial than the nine on which action was taken this year. Among them, for example, is the bill, opposed by the railroads, which would give the commission authority to prescribe rules for the inspection, testing and maintenance of air brakes; and the penalty per diem proposal on which the railroad industry is divided.

Also, the proposal to amend the Locomotive Inspection Act, which is opposed by railroad labor. This would make the act's provisions more general and thus more flexible and eliminate provisions for appointment by the President of the director and assistant directors of locomotive inspection.

No action, other than House committee hearings, was taken this year on the railroad industry's rate-freedom program. This program is designed to incorporate "three shall-nots" into the Interstate Commerce Act, thus prohibiting commission consideration of the effect of proposed rates on another mode of transportation. Neither was any action taken on bills to implement other recommendations of President Eisenhower's Cabinet Committee on Transport Policy and Organization.
(*Continued on page 15*)

Watching Washington *with Walter Taft*

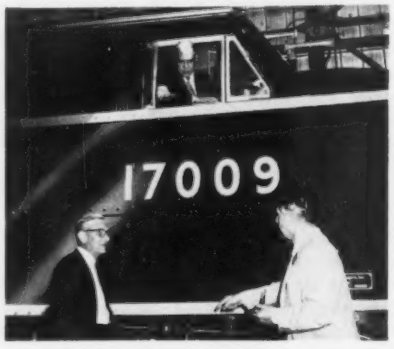
• **PENALTY SHIPPERS PAY** for loading long-type watermelons lengthwise, instead of crosswise, will be cut in half October 1. Ruling—in I&S No. 6566—that only 110% of crosswise-loading rate is justified for shipments loaded lengthwise, the ICC has condemned the 120% rate, in effect since March 1 from Southeastern territory to Official territory. Penalty was established after tests indicated that it would cut watermelon damage claims, which average among highest of any commodity.

• **TRUCKER SAFETY VIOLATIONS** are now approached in a new way by the ICC. The commission has called upon six offending truckers to show cause why their certificates should not be revoked or suspended. The new procedure was developed after a high percentage of safety violations was reported in the commission's expanded inspection and road check program. Heretofore, commission relied principally on prosecutions in the federal courts and the resultant fines to enforce its motor-carrier safety regulations.

• **THROUGH-ROUTES LEGISLATION** sought by the American Short Line Railroad Association may be enacted next year, despite opposition by the AAR and the ICC. Proposed legislation, embodied in the bill H. R. 5384, was detoured around much red tape to pass the House under suspension-of-rules procedure, which requires a two-thirds vote. Thus it is well posed for passage by the Senate and final enactment at the 1958 session.

• **THE BILL WOULD AMEND** the Interstate Commerce Act's Section 15 to stipulate that no through route shall be canceled, or "commercially closed," except by agreement of all interested lines—unless such arrangements are approved by the commission after hearings. On the "commercially closed" matter, the short lines complain that this has been accomplished, without actually canceling routes, by publication of rates, subject to routing restrictions, which are lower than open-routing rates on the same traffic.

• **LEGISLATIVE RECOMMENDATIONS** of the ICC's next annual report will be principally those of the previous report which were not acted upon by Congress this year. They will thus include again a call for new power to prescribe penalty per diem rates and rules and regulations for the inspection and maintenance of train brakes. That's the prospect as sized up at this time by Commissioner Minor, a member of the commission's legislative committee. He expects that any new recommendations will be "relatively minor" proposals to meet specific situations resulting from "adverse" court decisions.

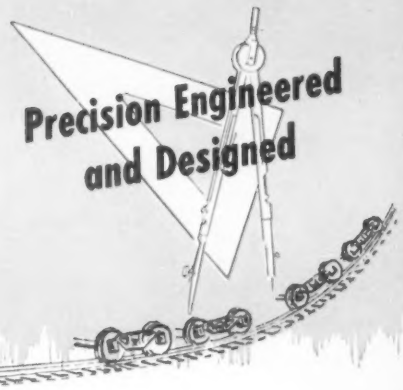


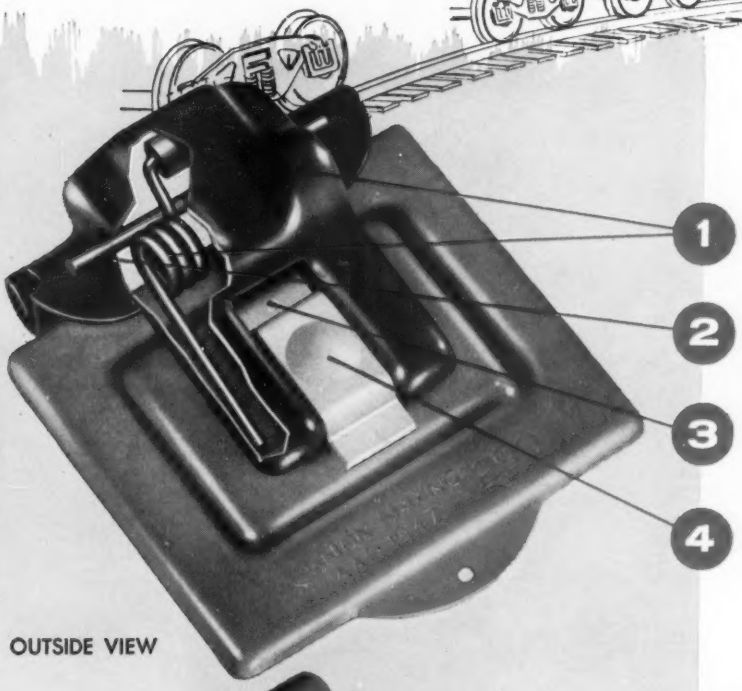
More Diesels for Brazil

Dr. Durval d'Azevedo (in locomotive cab), executive vice-president of the Paulista of Brazil, recently made an inspection tour of the Schenectady, N.Y., plant of Alco Products. Alco will build 10 of its 900-hp diesel-electric switching locomotives for the railroad, with delivery to begin next year. With Dr. d'Azevedo are Alex Ross (left), Alco chief locomotive development engineer, and Manuel Alonso, Alco vice-president of foreign sales.

A NEW and BETTER JOURNAL BOX LID

A.A.R. Approved





OUTSIDE VIEW

FEATURES

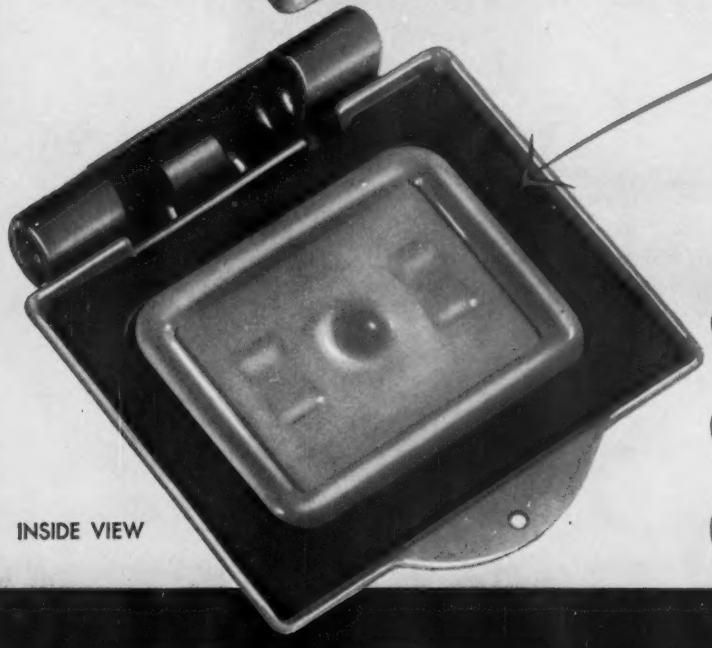
Developed to Save Money

Redesigned double torsion spring includes extended arms which firmly contact the cover at the central joint—to minimize vibration.

Lid pin bearing 1¼" wide gives extra long service. Our ¾" headless pin provides the maximum efficiency at low cost.

Cover and Hood are securely joined together with strong steel straps. Projection welded at two locations has made the cover and strap one piece.

Articulated joint of ball and socket design guarantees positive fitting of the cover to the box front even though the face of the box may vary.



INSIDE VIEW

IMPORTANT FEATURES of our *NEW* RUBBER OIL SEAL

(Pat. Applied for)

Entire lid is redesigned, providing space for the rubber oil seal. This seal prevents loss of oil and thereby lowers operating costs.

This *Oil Seal* will minimize "HOT BOXES" due to loss of lubricating oil, and will also keep entrance of foreign material to a minimum.

Lubrication oil loss, prevented by our rubber seal, results in increased *Savings*. Extreme temperature of the lubricating oil will not affect the seal or the adhesive.

UNION

SPRING and MANUFACTURING Co.

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MINER

Friction Draft Gears

Friction-Rubber Draft Gears

Rubber Draft Gears
for Freight Cars

Locomotives and Caboose Cars

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MINER recommends

lading and car protection devices developed by progressive research and experience gained during the production of millions of highly successful shock-absorbing devices and through service tests.

1. Class A-22-XL Friction Draft Gear

This gear has the desirable characteristic of maintaining low pressures upon draft lugs and sills during car impact and train operation, thereby eliminating damage claims and conserving railroad funds. The gear has great sturdiness of column and resistance to wear achieved by modern metallurgical practices. Every gear is subjected to AAR capacity test before shipment. More than 760,000 of these gears are now in service on American and foreign railroads.

2. Class RF-333 Draft Gear

A masterpiece of shock protection for every type and capacity of freight car and locomotive. The only combination rubber and friction draft gear certified for unlimited use on railway equipment. Truly something new in superior protection for present and future requirements. Has the endurance of a friction gear plus controlled movement of rubber units to lessen recoil. Capacity at 2½″ travel is 40,000 ft. lbs., and 35% of this amount is available at half-travel with instantaneous response to car movement. The ultimate in protection for cars with 24⅝″ pocket. This gear has been most enthusiastically accepted by railroads interested in future economies.

3. Class FR-16 Rubber Draft Gear

This all-rubber draft gear has been scientifically engineered to meet the most severe service on American railroads. It provides full-time protection to lading, cars and attachments. Ample initial compression, with 25% capacity at half-travel, eliminates slack and worn car components by providing continuing restraint of coupler, controlling its movement through high pressure zones. It is fully enclosed, self-contained, and reduced in length at final assembly by use of inserts to permit easy application.

4. Class CR-6-2 Caboose Car Gear

Introduced to the railroads after many riding tests. Now after several years of service on many roads this gear is credited with providing the ultimate in comfort for the trainmen in the caboose. The gear has a total travel of 6″. The first 5″ of movement is a smooth cushioning action, while the final 1″ movement is available for higher capacity operation in pusher service. Application can be made to a 24⅝″ pocket with long shank couplers and attachments, which have been available for some time by several coupler manufacturers.

Miner Draft Gears perform a vital service in the economic operation of today's high-speed trains and have thoroughly demonstrated their ability to protect car structure and lading under the most severe operating conditions.

W. H. MINER, INC. **CHICAGO**

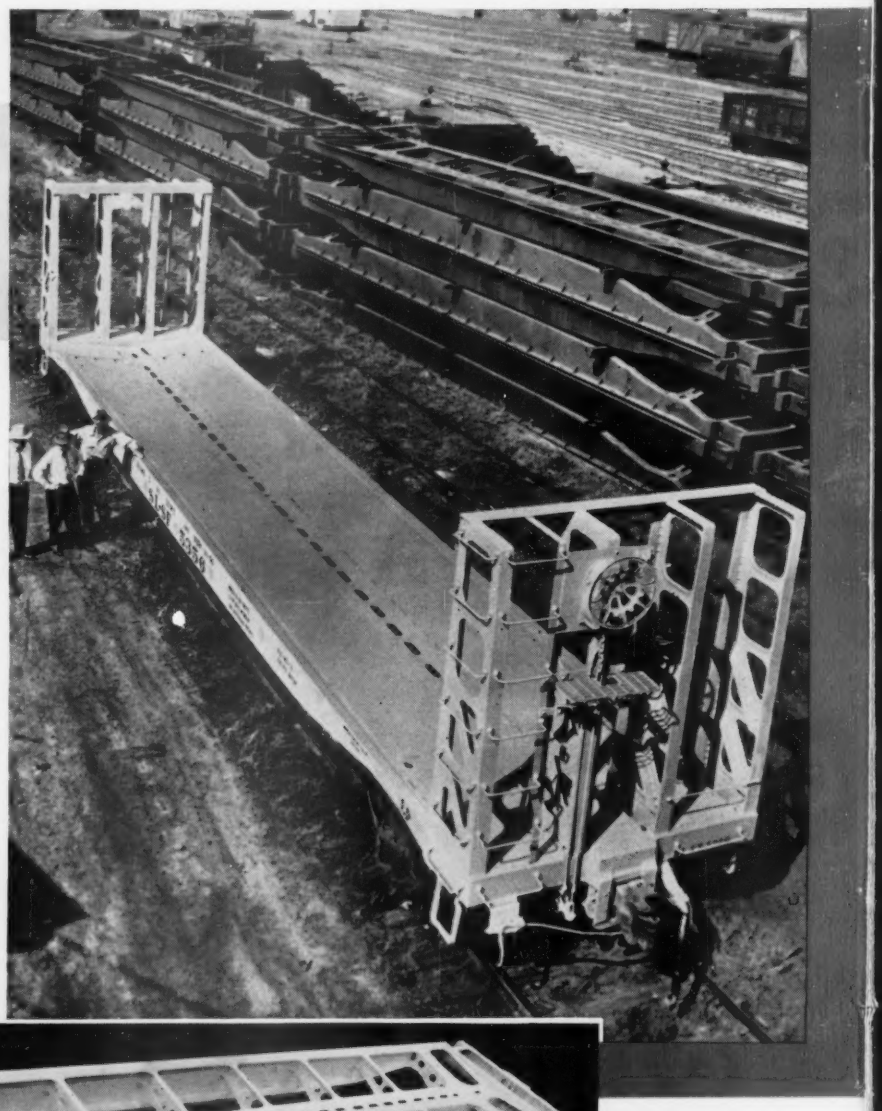
Advertisement

For **Greater Strength**

Maximum Capacity–Maximum Revenue

NEW 70-TON PULPWOOD CARS

with Commonwealth One-Piece Underframes and Interlocking Cast Steel Bulkheads



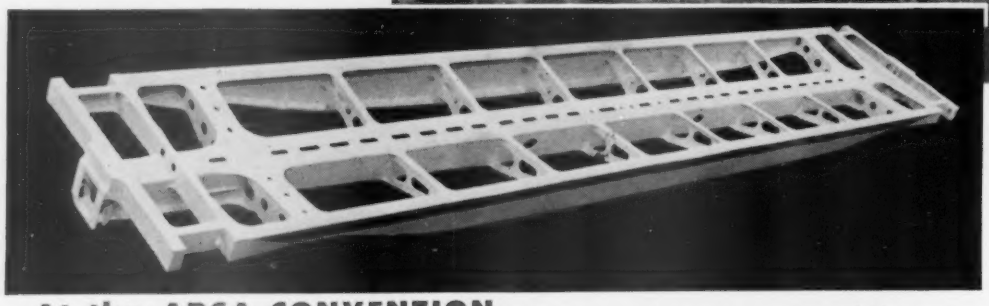
Now on order or building for

Atlantic Coast Line
Missouri Pacific
St. Louis-San Francisco
St. Louis Southwestern

More and more railroads are using Commonwealth Underframes for greater payload . . . more round trips per month . . . lowest upkeep costs and maximum revenue.

The maximum capacity of these well designed 70-ton cars—approximately 30 cords—is made possible by the use of Commonwealth One-Piece Cast Steel Underframes and Interlocking Bulkheads which provide greater strength at less weight. Five of these larger cars handle a load which would require seven 50-ton cars, thus permitting shorter trains and reducing switching costs.

What's more, corrosion is no problem, and these cars provide longer life, continuous availability with Underframes and Ends that are *maintenance-free.* If you aren't realizing the profitable investment Commonwealth Underframes offer, it will pay you to act now.



At the ARSA CONVENTION . . . *meet us at our exhibit*

. . . Booth 153-154 Sherman Hotel, September 15-18

GENERAL STEEL CASTINGS

GEARED TO PROGRESS
P R I
MEMBER

GRANITE CITY, ILL. • EDDYSTONE, PA. • AVONMORE, PA.

(*Continued from page 10*)

Senate and House committees held hearings on various bills to liberalize benefit provisions of the Railroad Retirement Act, but they got no further. These proposals include a plan whereby higher payroll taxes to finance increased benefits would be made painless for the employees, i.e., they would be more than offset by provisions excluding from taxable income the whole amount of the payroll taxes paid by employees.

Union Shop Talks Are Deadlocked

Santa Fe, opposed in principle to union demands, says non-ops rejected company's counter-offer; strike vote reported underway.

Month-long discussions between the Santa Fe and 15 non-operating unions on labor's demand for a union shop have ended in deadlock.

The unions were reported taking a strike vote; A. O. Olsen, vice-president of the Order of Railroad Telegraphers and chairman of the employees' national conference committee, said a decision on the proposed walkout may be known late this month.

In a letter to Mr. Olsen, Santa Fe officers said they had attempted to reach a "satisfactory compromise" in the recent talks, although "we have made it clear that we believe that this demand is wrong in principle."

The unions, Santa Fe charged, "have insisted upon some important features of your demands with which we have been unable to agree."

The railroad listed several points of major disagreement. In a letter sent to Santa Fe employees, the road spelled out a counter-proposal aimed at compromise.

"The company. . ." employees were told, "offered to yield to the demands if two conditions were met: First, that no employee should be discharged for failing to pay for contributions or expenditures by the unions for political or ideological purposes or for social, fraternal or insurance or other purposes not connected with collective bargaining; and second, that present union members would be allowed to resign during a specified period, although they would be bound to continue to pay dues and assessments required for collective bargaining purposes."

The unions, Santa Fe charged, "rejected this counter offer, insisting upon compliance without change in their demands."

The two "conditions" outlined in the letter to the employees covered, in substance, the areas of disagreement cited in the note to Mr. Olsen. Points of dispute listed by the railroad included:

- An alleged demand that Santa Fe "exercise the drastic power of discharging employees whose services may be valuable and entirely satisfactory to it, merely because these employees do not comply with conditions which you desire to have imposed on employment involving membership in and payment of initiation fees, dues and assessments to your organization. . ."
- Reported union demands that "all employees, whether they join a union or not, should make full payment of initiation fees, dues and assessments imposed by you —this could include amounts spent by your organizations for purposes not related to collective bargaining. . ."
- "Insistence that those who are now members on a voluntary basis be denied the opportunity to withdraw from membership between the date on which an agreement is signed and the date on which compliance is required. . ."
- "Important principles. . . supported by court decisions" which are not included in the proposed agreement, according to the railroad. Here, Santa Fe cited three cases—one before the Supreme Court of the United States, two before state supreme courts—in support of its position. The contract which the unions proposed, the company said, " is in the same form as that signed in August 1952, with some Eastern railroads—modified only by a supplemental agreement like that signed with the Atlantic Coast Line a few months ago."

Santa Fe left the door open for further discussion. The road asked the unions to give additional consideration to the situation "and we suggest that our conferences be continued for the purpose of settling our differences with respect to them [the 'principles involved in the crucial points' cited by Santa Fe]."

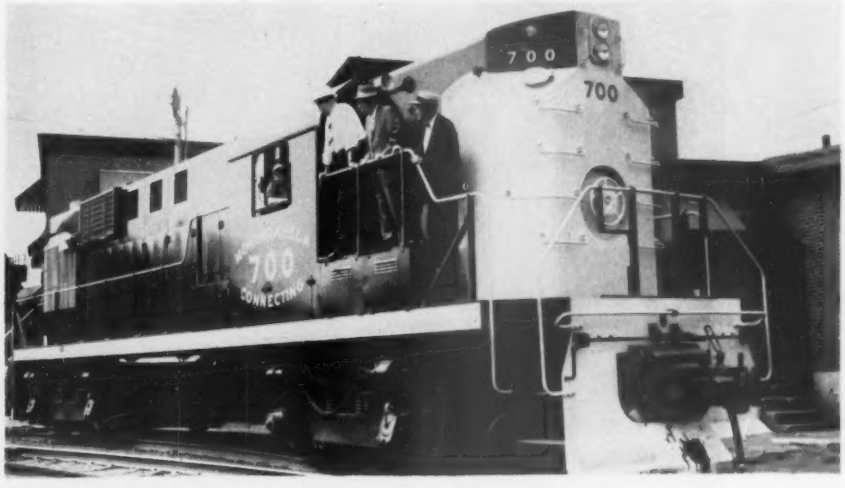
Renewal of union shop talks on the Santa Fe began last July 29, in response to a union request.

Both union and company spokesmen cited U. S. Supreme Court opinions on the union shop in railroad employment. Santa Fe, however, pointed out that in the 1956 case of Railway Employees Department, AFL, et al., v. Hanson, et al., the court said "the only conditions to union membership authorized by Section 2, Eleventh, of the Railway Labor Act are the payment of initiation fees, dues and assessments, and that Congress intended these payments to relate to the work of the union in the realm of collective bargaining. . ."

The court ruling added that if assessments are imposed for other purposes, "a different problem would be presented."

At the time the decision was handed

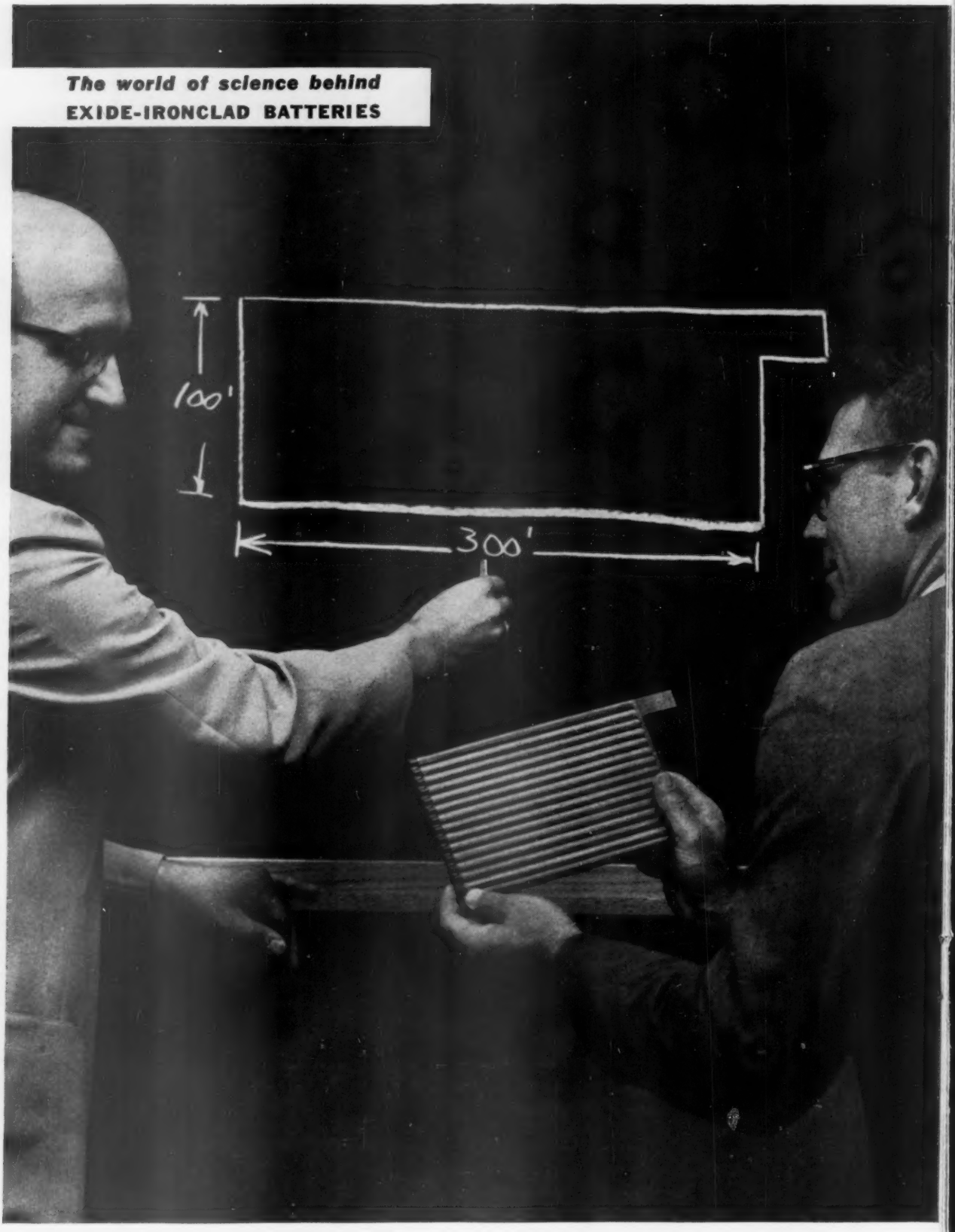
(*Continued on page 18*)



All New But For Trucks on MonCon Locomotive

Mounted on trucks taken from a retired Monongahela Connecting unit, this new Alco Products "DL-701" all-purpose, locomotive recently went into transfer service at Pittsburgh. On hand for test run starting operations were MonCon officers (left to right on run board) J. E. Robinson, general superintendent; M. S. Rose, vice-president; and A. L. Hutchison, president.

Being interviewed is G. S. Hartman, Administrative Assistant to the Director of Research



"The active area is 48,000 times as big as the plate"

At the Exide Laboratories—

Reporter: Are you talking about just that one Exide-Ironclad positive plate, Mr. Hartman?

Hartman: That's right. The surface area of the active material in this plate is 48,000 times as big as the plate size.

Reporter: How is that possible?

Hartman: Because Exide can take full advantage of the superior retention characteristics of the tubular plate design by using specially prepared active material. This material means more surface area.

Reporter: What does this enormous active area mean to the battery user?

Hartman: More power. An Exide-Ironclad Battery can carry heavier work loads, intermittent and continuous, because it has the extra contact area between the active material and the electrolyte where the extra power can be developed.

Reporter: Obviously, this is an important feature of the Exide-Ironclad.

Hartman: Yes it is. But it's just one of many engineering details that contribute to its high capacity and long life.

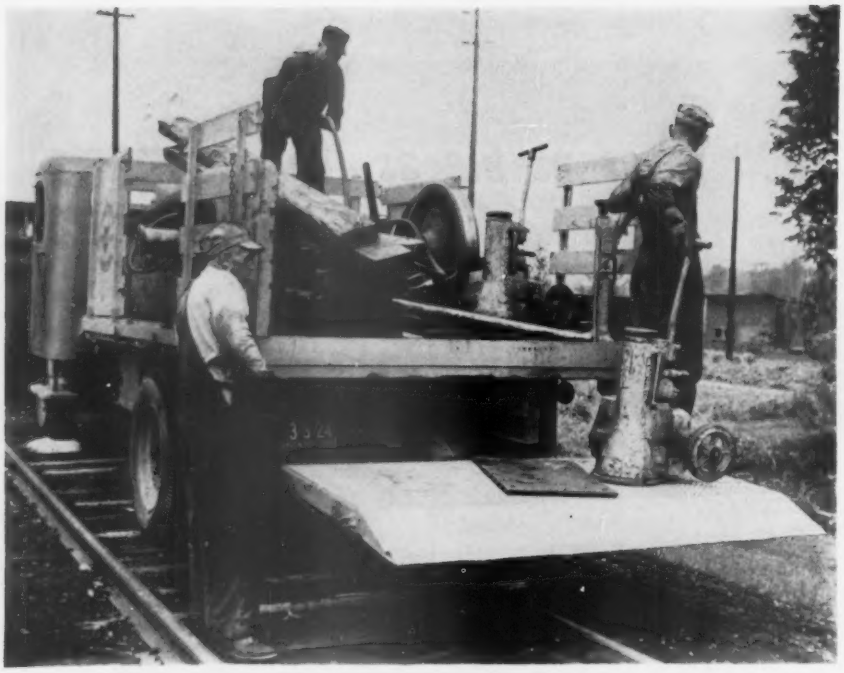
Note to battery users: Whenever you order heavy duty batteries or the equipment that requires them, be sure to specify Exide-Ironclad. For detailed bulletin, write Exide Industrial Division, The Electric Storage Battery Company, Philadelphia 2, Pa.

Battery for railway car lighting and air conditioning. Model EHL. Write for Bulletin No. 5168.

Battery for railway diesel starting. Exide-Ironclad Model MVD. Write for Bulletin No. 5348.

Exide®

THE ELECTRIC STORAGE BATTERY COMPANY



AC&Y Using Truck as Rolling Repair Shop

A specially designed International truck, with equipment capable of jacking up a diesel locomotive, is in service on the Akron, Canton & Youngstown as a highly mobile repair-shop-on-wheels. Capabilities of the unit (above), were demonstrated shortly after the truck was placed in service, when it was used to jack up a heavy-duty flat car to make air brake repairs. After repairs were completed, the truck's air compressor went into use to conduct a brake test. The truck, a 190-in. wheelbase model, is equipped with a five-man cab, 4,000-lb capacity lift tail gate, air compressor, two 70-ton air jacks, power steering and power brakes.

July Net Up $6 Million

Class I railroads in July had estimated net income, after interest and rentals, of $50 million—up $6 million from the $44 million reported for July 1956.

The latest statement from the AAR's Bureau of Railway Economics also shows that the July net railway operating income, before interest and rentals, was up more than $6¾ million—from $61.7 million to $68.5 million.

For this year's first seven months, the estimated net income was off $52 million —$395 million compared with $447 million last year. Net railway operating income for the seven months was $519 million, compared with $573 million last year, a decrease of $54 million.

Twenty-two Class I roads failed to earn interest and rentals in this year's first seven months. Rate of return for the 12 months ended with July was 3.71%, compared with 4.01% for the previous 12 months.

CLASS I RAILROADS—UNITED STATES

	1957	1956
Month of July		
Total operating revenues	$872,658,361	$807,213,371
Total operating expenses	695,528,628	653,843,427
Operating ratio—percent	79.70	81.00
Taxes	85,352,939	69,978,911
Net railway operating income (Earnings before charges)	68,486,700	61,686,947
Net income, after charges (estimated)	50,000,000	44,000,000
Seven Months ended July		
Total operating revenues	$6,106,484,249	$6,043,558,324
Total operating expenses	4,805,911,027	4,691,148,995
Operating ratio—percent	78.70	77.62
Taxes	627,112,171	628,802,047
Net railway operating income (Earniings before charges	518,790,232	573,280,686
Net income, after charges (estimated)	395,000,000	447,000,000

(*Continued from page 15*)
down, the court indicated that "We pass narrowly on Section 2, Eleventh, of the Railway Labor Act. We hold only that the requirement for financial support of the collective-bargaining agency by all who receive the benefits of its work is within the power of Congress under the Commerce Clause and does not violate either the First or Fifth Amendments. We express no opinion on the use of other conditions to secure or maintain membership in a labor organization operating under a union or closed shop agreement."

Tilford Hails L&N-NC&StL Merger

John E. Tilford, president of the Louisville & Nashville, has saluted, the merger of the L&N and the Nashville, Chattanooga & St. Louis with a declaration that the combination "will mean more and better public service under one management."

Merger, he said, is "quite natural and logical," particularly in view of the "ever tightening circle of competition, with highway, waterway and airway carriers all enjoying some form of public subsidy."

President Tilford said the merger should mean that additional improvements can be made "which will increase the traffic movement with a fuller use of the transportation capacity." In this connection, he cited a $15 million yard improvement at Radnor, Tenn., and other modernization projects underway at Atlanta and Birmingham.

Merger of the NC&StL into the L&N became effective August 30. It was carried out in accordance with an ICC order of March 1, 1957, which authorized consummation of the agreement of merger on or after August 14.

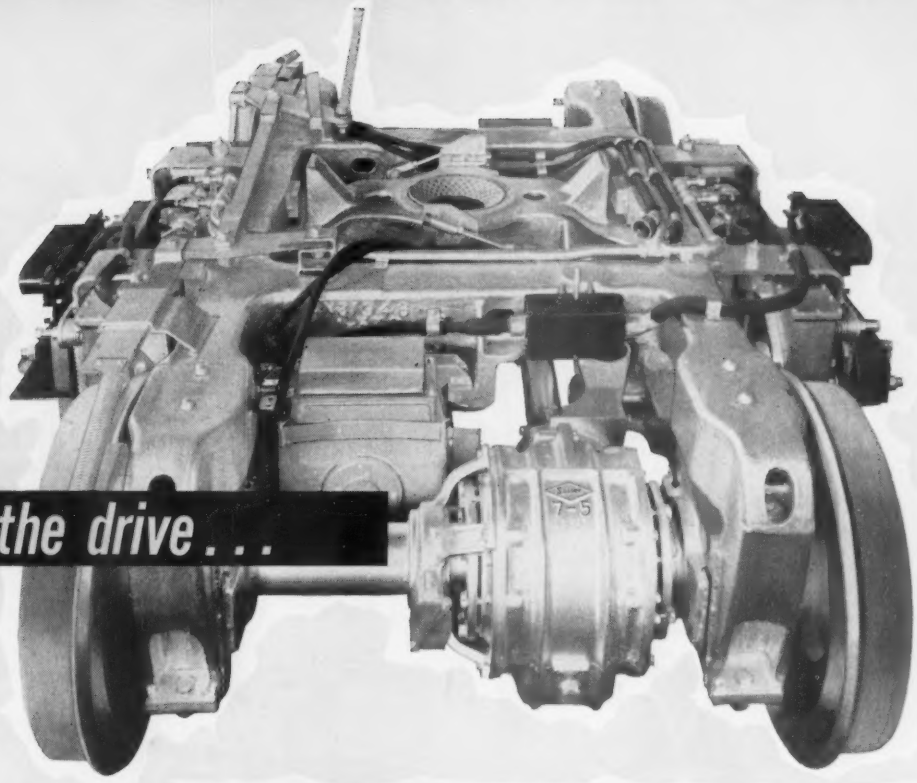
Hearings on H&M Revamp Plan Set for October 7

A plan of reorganization for the bankrupt Hudson & Manhattan which excludes approximately $45,000,000 of stockholders from participation on the grounds of insufficient assets and earnings has been filed in the U.S. District Court in New York.

Hearings on the plan are scheduled to begin October 7 before U.S. District Judge Lawrence E. Walsh.

RR Exhibit Most Popular

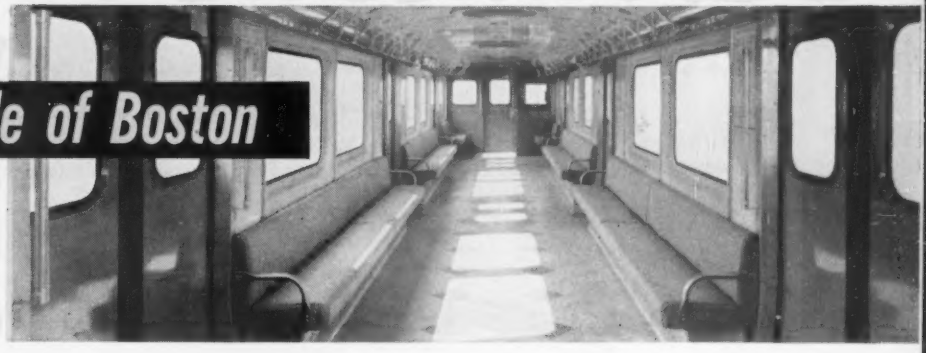
Railroad presidents John W. Barriger (left), of the Pittsburgh & Lake Erie, and Richard N. Shields (right), of the Pittsburgh & West Virginia, made Mayor David L. Lawrence of Pittsburgh an honorary railroader when he visited the "Railroad Exhibit" at the Allegheny County Fair. Exhibit, sponsored by the Community Relations Committee of the Pittsburgh Railroads, was seen by an estimated 145,000 persons and was one of most popular at the fair. Messrs. Barriger and Shields are members of the committee.



This is the drive . . .

that speeds the cars . . .

that serve the people of Boston



The Spicer Model 7-5 Traction Motor Drive now is in use in 50 new Pullman-Standard traction cars serving the Metropolitan Transit Authority of Boston, Mass.

This is a new Spicer Drive, developed to take advantage of the weight savings that are being incorporated into Rapid Transit car design through the use of lighter weight, higher speed electric motors.

The drive can accommodate hypoid gearing in ratios from 5.67 to 1 up to 9 to 1. The unit is furnished completely assembled, requiring no field adjustment, bearing alignment, or gear setting when installed.

More than 13,000 Spicer Drives of several types are now in use throughout the world. Write for technical bulletins, stating your requirements.

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DANA PRODUCTS Serve Many Fields:

AUTOMOTIVE: Transmissions, Universal Joints, Propeller Shafts, Axles, Powr-Lok Differentials, Torque Converters, Gear Boxes, Power Take-Offs, Power Take-Off Joints, Clutches, Frames, Forgings, Stampings.

INDUSTRIAL VEHICLES AND EQUIPMENT: Transmissions, Universal Joints, Propeller Shafts, Axles, Gear Boxes, Clutches, Forgings, Stampings.

AVIATION: Universal Joints, Propeller Shafts, Axles, Gears, Forgings, Stampings.

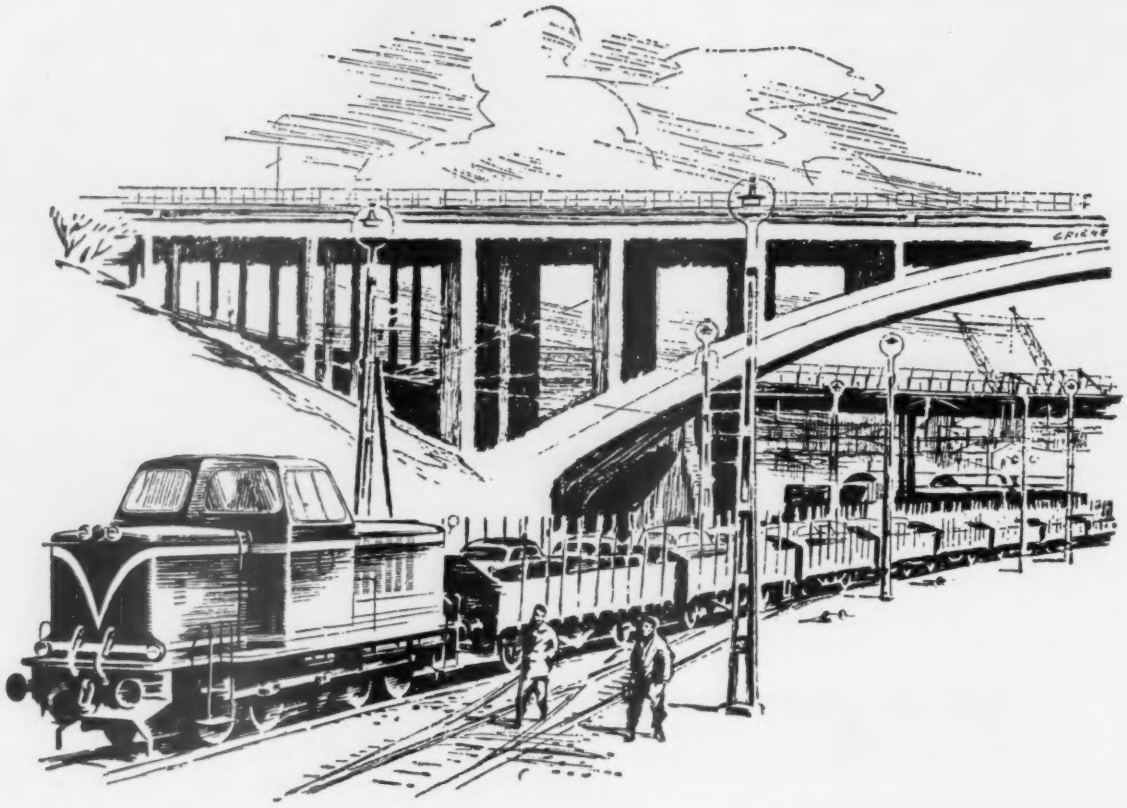
RAILROAD: Transmissions, Universal Joints, Propeller Shafts, Generator Drives, Rail Car Drives, Pressed Steel Parts, Traction Motor Drives, Forgings, Stampings.

AGRICULTURE: Universal Joints, Propeller Shafts, Axles, Power Take-Offs, Power Take-Off Joints, Clutches, Forgings, Stampings.

MARINE: Universal Joints, Propeller Shafts, Gear Boxes, Forgings, Stampings.

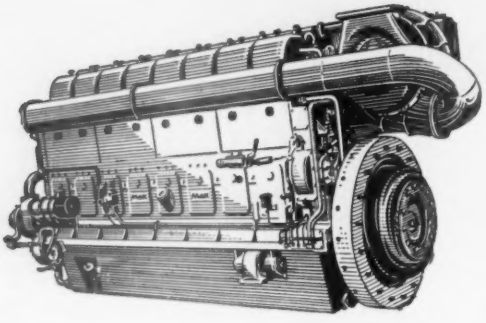
Many of these products manufactured in Canada by Hayes Steel Products Limited, Merritton, Ontario

DANA Spicer



Construction and operating characteristics of
MORE THAN 160 DIESEL LOCOMOTIVES
OF THE STANDARD CLASSES 600—1200 HP
result in a considerable gain in capacity and technical advantages for rationalizing measures.

All locomotives in this range are uniformly equipped with the well-known MaK locomotive engines; series M 300 type. The advantages of an efficient and robust main engine are combined with minimum storage of spares due to the fact that the vital parts of this type of engine, which are subject to heavy wear, are standardized.

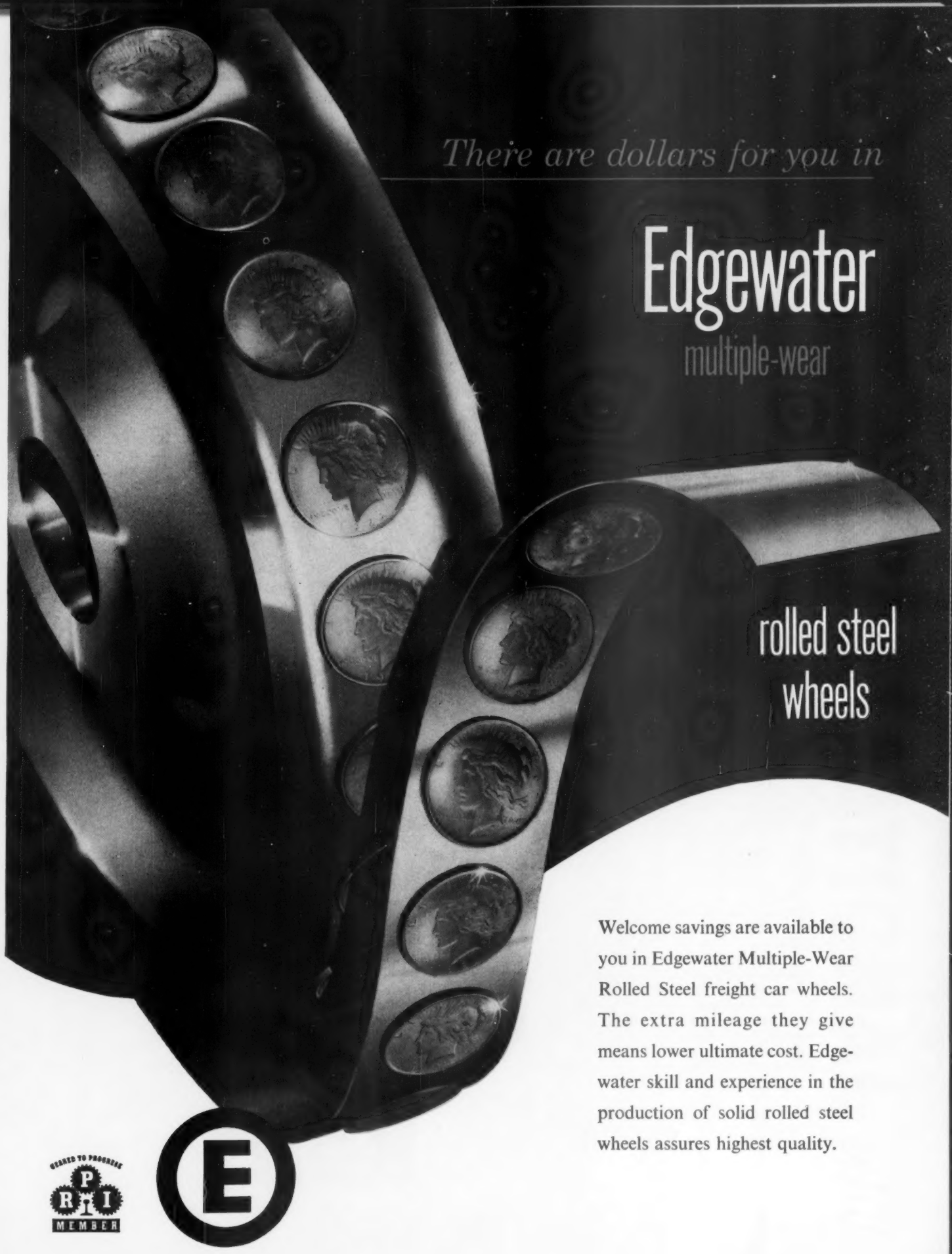


Some technical data:
MaK-Diesel Locomotive Type 800 D
MaK four-stroke Diesel Engine
developing 800 HP continuous output
at 750 r.p.m.
Power transmission: Hydraulic
Weight in working order: 60 tons
Axle load: 15 tons.

We supply diesel-hydraulic locomotives in the range of capacity from 200 to 2,000 HP

MaK

MASCHINENBAU KIEL AKTIENGESELLSCHAFT
GERMANY



Welcome savings are available to you in Edgewater Multiple-Wear Rolled Steel freight car wheels. The extra mileage they give means lower ultimate cost. Edgewater skill and experience in the production of solid rolled steel wheels assures highest quality.

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ON SHORTLINE AS WELL AS MAINLINE ROADS IT'S BENDIX FUEL INJECTION

All over the country shortline railroads like those listed here are giving 'round-the-clock service that helps make the American railroad system the envy of the world.

Using 70-ton and 95-ton General Electric road switchers powered by Cooper-Bessemer engines with Bendix* Fuel Injection Equipment, these shortline roads maintain high operating standards in the performance of their important work.

Bendix is proud that its fuel injection equipment has received such high endorsement from so many shortline railroad operators.

It furnishes further evidence that when dependable, efficient, and economical operation is a must Bendix is the logical choice for fuel injection equipment. SCINTILLA DIVISION OF BENDIX AVIATION CORP., SIDNEY, N.Y. EXPORT SALES AND SERVICE: BENDIX INTERNATIONAL DIVISION, 205 EAST 42ND ST., NEW YORK, N.Y. *REG. U.S. PAT. OFF.

This Bendix pump and nozzle are used on the type of road switcher pictured above.

Partial list of shortline roads using Bendix Fuel Injection Equipment

ALBANY & NORTHERN
ARKANSAS & OZARKS
BALTIMORE & ANNAPOLIS
BARRE & CHELSEA
BELFAST & MOOSEHEAD LAKE
COLORADO & WYOMING
DES MOINES & CENTRAL IOWA
EAST ERIE COMMERCIAL
FT. DODGE, DES MOINES & SOUTHERN
FRANKFORT & CINCINNATI
GEORGIA NORTHERN
GREENVILLE & NORTHERN
HAMPTON & BRANCHVILLE
LANCASTER & CHESTER
LIVE OAK, PERRY & GULF
MISSISSIPPI EXPORT
MOBILE & GULF
MUNCIE & WESTERN
NORTHAMPTON & BATH
RAHWAY VALLEY
SANFORD & EASTERN
SOUTH GEORGIA
TALLULAH FALLS
VALDOSTA SOUTHERN
WASHINGTON & OLD DOMINION

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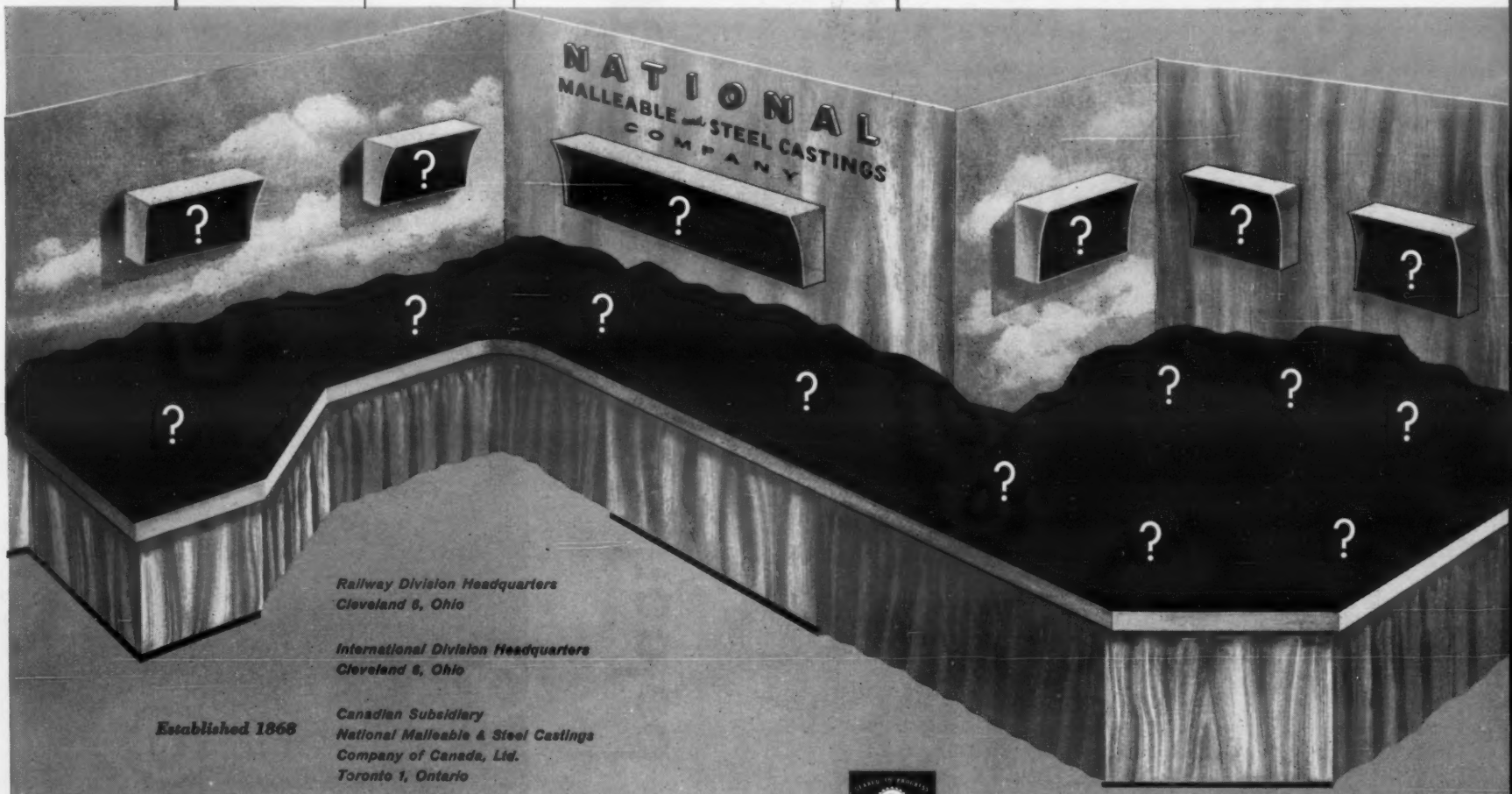
the NATIONAL exhibit

BOOTHS 161 · 162

Allied Railway Supply Association Convention

SEPTEMBER 16 17 18 | HOTEL SHERMAN, CHICAGO



Railway Division Headquarters
Cleveland 6, Ohio

International Division Headquarters
Cleveland 6, Ohio

Established 1868

Canadian Subsidiary
National Malleable & Steel Castings
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Toronto 1, Ontario

NATIONAL MALLEABLE and STEEL CASTINGS COMPANY

MEMBER

COUPLERS • YOKES • DRAFT GEARS • FREIGHT TRUCKS • JOURNAL BOXES

STUDENT Lucien Forgues (Real Estate Department) installs himself in dormitory room.

JUST ARRIVED by train, students gather at Lennoxville, seat of Bishop's University.

250 CNR Officers Get Schooled

Carefully selected group of 50 each year have two month's summer program — Project has just ended fifth successful session for 'middle management.'

Fifty Canadian National officers at the end of the first week in August completed the company's two months' staff school program, at Bishop's University, Lennoxville, P.Q.—in the scenic Eastern Townships area of Quebec province, slightly more than 100 miles east of Montreal. This is the fifth year of the staff school—so the company now has approximately 250 officers who have had the benefit of this educational experience.

The school is unique of its kind among railways on this continent—e.g., in that instruction is not given, only, in management problems common to all business, but specific railway problems are also included.

Management educational courses of one kind or another are provided, with greater or less intensity, by a majority of the larger railways. But on most railroads it is higher rather than middle management where the main educational emphasis has lain. And the customary method has been to have the officers attend an "advanced management" program—either at one of several large universities or at classes offered by the American Management Association. These "advanced management" courses cover questions common to the management of all businesses, with no particular attention to railroad problems.

The main advantages which many attribute to the "advanced management" courses in universities is that they give railroad people intimate acquaintance with managers of other industry. The CNR program, being restricted to its own people, does not provide this "outside" acquaintance. On the other hand, it does direct the attention of students to specific railroad problems—which hardly any of the other courses do.

And, with a system as far-flung as the CNR is, there exists a good deal of interterritorial and interdepartmental lack of acquaintance which the staff school corrects. Probably, for middle management on such a railway as CNR, intracompany acquaintance takes precedence in importance over the desirability of "outside" contacts.

Giving Direction

The purpose of the staff school is twofold: (1) by a careful process of screening of potential talent in middle management jobs, the school program gives management desirable information on likely candidates for promotion to more important positions and (2) once these likely candidates are located, the school gives them instruction and impetus to move them forward in the desired direction. In other words, the company expects that, in future, it will be assured of an abler team of managers on the property than

MEAL TIME means time to relax in university cafeteria.

OPENING BANQUET features address by W. T. Wilson, assistant vice-president, personnel.

it could hope to have without the program.

Expert teachers from leading universities conduct courses in standard management subjects at the school. But the selection of the students and the administration of the program is strictly an "inside job" of the CNR management. The activity heads up under W. H. Hobbs, vice-president, personnel, and W. T. Wilson, assistant vice-president, personnel.

Each session has a "co-ordinator"—who, in a usual academic set-up, would be called a "dean." Since the first session of the staff college, the man chosen co-ordinator has invariably been one who has gone through the program himself; and the year before he takes over as co-ordinator, he spends a lot of time on the job with his predecessor, "learning the ropes." The co-ordinators have been D. V. Gonder ('53) now vice-president and general manager, Atlantic region, Moncton; R. G. Chestnut ('54), assistant to vice-president operations, Montreal; A. T. Mathews ('55), special assistant, traffic (personnel), Montreal; E. T. Hurley ('56), controller, tests and material research, Montreal; and W. B. Jackson ('57), general superintendent, North Bay, Ont. The co-ordinator for the 1958 session will be G. H. Bloomfield, employee relations officer, Central region, Toronto. He has been working with the 1957 co-ordinator, learning for the next session.

The "senior committee" in charge of the program is made up of the president (Donald Gordon); the vice-president, personnel (W. H. Hobbs); and the vice-president, research and development (Dr. O. M. Solandt). The "working committee" is headed by W. T. Wilson, assistant vice-president, personnel, all the past co-ordinators—and by several other officers, including J. A. McDonald (assistant vice-president, research and development) and Alexander H. Hart (assistant to vice-president, traffic).

There is, in addition, a "selection board" which is headed by the co-ordinator of the approaching session, assisted by other company officers. The co-ordinator travels over the system and personally interviews all candidates. The names of the candidates are proposed by the vice-presidents and department heads—and interviews are set up at various points on the system—a process requiring from two to three months' time.

Candidates Qualifications

To be considered as candidates, the employees concerned must (1) belong to the category of middle management, (2) show some supervisory ability by actual experience and (3), preferably, be under age 45. (The actual average has varied from 37 to 40. The range of ages in the 1957 program was from 27 to 53.)

Appraisal is systematic and includes ratings on physical qualities, personality, facility of expression, qualities of mind, interest and "general impressions." Ratings are given on work records and "growth potential." Candidates who do not come up with a certain minimum number of points are usually disqualified. Sometimes those who do qualify cannot be accommodated in the year they qualify (since the school is limited to 50)—in which case they are given preference in selection the following year.

Company officers who lecture (primarily on the work of their own departments)—in addition to President Gordon, the vice-presidents in charge of principal departments, and the co-ordinators—include W. T. Wilson, assistant vice-president, personnel; J. A. McDonald assistant vice-president, research and development, and S. W. Fairweather, retired vice-president, research and development.

The regular courses in management problems are given by well-known university teachers—these courses including: Administrative Practices, Financial Management, Production Management, Marketing, Labor Relations, and English (including public speaking).

The texts used in the courses predominantly emphasize the "case method" and include the following: "The Administrator" (Glover & Hower); "Policy Formulation" (Smith & Christensen); "Manage-

ment Accounting" (Anthony); "Unified English Composition" (Sanders, Jordan and Magoon); "Problems in Labor Relations" (Selekman and Fuller). In addition to the texts, there are library readings in a number of reference books, and considerable mimeographed case material. Each student is also given, and expected to study, copies of the annual reports of the International Paper Company, the Canadian Pacific, and the Ford Motor Company—also the preliminary report of the 1956 Royal Commission on Canada's Economic Prospects (commonly termed "the Gordon Report").

Prior to going to Lennoxville, each student gets a "preliminary package" with which he is expected to familiarize himself. This package includes J. A. McDonald's booklet "Logical Analysis"; the 1951 Royal Commission (Turgeon Commission) Report on Transportation; the CNR annual report; and the book "Executive Action" (Learned, Ulrich and Booz).

The 1957 class included 2 from the public relations department, 1 from real estate, 11 from transportation, 5 from engineering, 1 from express, 8 from mechanical, 3 from passenger traffic, 4 from freight traffic, 1 from purchases and stores, 4 from accounting and financial, 1 from personnel, 2 from law, 2 from research and development, 5 general. Geographically the class hailed all the way from the Maritimes to British Columbia —including a couple from the GTW lines in the U.S.

Students are comfortably housed at Bishop's University—a small but well equipped institution, which is turned over entirely to the CNR for the summer months. Students reside in the men's dormitory and use the university cafeteria and assembly rooms. While the program of study is exacting, time and facilities are provided for recreation and sports. Families of students do not accompany them to Lennoxville.

A Typical 'Case'* Discussed by CNR Students

It was a bright summer's afternoon and the section crew were returning to their assigned territory by track motor car. After proceeding only a short distance they struck an automobile at about 3.30 p.m. while passing over a public crossing. The collision resulted in serious injury to two of the four-man crew. In the automobile the passengers sustained minor bruises and shock. Damage to the automobile and track motor car amounted to $190 and $215, respectively.

This accident occurred in one of the remote territories of the railway where hiring and retaining a labor force is a problem of some proportion. The track employees are mainly of foreign extraction. Educational opportunities are limited, and learning the languages of their adopted country is hampered by the fact that these employees associate almost entirely with their own kind.

As regular employees, however, these forces do accumulate seniority and eventually apply on bid and are awarded the choice jobs in the larger centers. The farthest moves are normally limited to the confines of one division. For injuries on duty, provincial laws require the railway to compensate 75% of the employee's wages (tax free) in addition to payment of all medical services.

In order to overcome the handicaps found in such remote areas the railway has adopted certain measures which are not practised in the heavier settled territories. For example, track forces are permitted, in most cases, to travel outside their section limits to the nearest communities where banks, stores, and post offices are situated. Such trips are made under a gentleman's agreement with the roadmasters and are permitted each pay day during working hours. Transportation at these times is by track motor car due primarily to lack of suitable roads. . . .

On the day of the accident in question Section Foreman Ryan and his three sectionmen, Pilaski, Sikorsky and Delano, had set out from Kinghorn by track motor car in order to cash their pay checks and perform some shopping at Geraldton. According to established practice they made their trip on company time. After spending more than an hour in Geraldton they started back. Sectionman Pilaski was assigned by Ryan to operate the car and Delano was posted to act as rear lookout. In the crossing accident which ensued both Ryan and Pilaski were seriously injured. Ryan sustained a bad concussion and fractured ribs which hospitalized him for two months. Pilaski was severly gashed about the face and head and required three weeks' hospitalization. Sikorsky and Delano were more fortunate in that they suffered no more than a shaking up.

Due to the serious nature of the incident Division Engineer Mackinnon took personal charge of the investigation while Ryan and Pilaski were still in hospital at Geraldton. It soon developed that neither the dispatcher on duty nor Roadmaster Jones were aware of any section crews at Geraldton at the time of the accident. Weather at the time had been warm, and though there was a strong suspicion that the men may have spent part of their time in a beverage room while at Geraldton, it could not be conclusively proven. It was determined, however, that visibility at the crossing had been obstructed by a nearby building.

Pilaski stated at the investigation that he had been operating the car under Ryan's instructions and that he was not ordered to stop at the crossing. Although he had 10 years of service he was unable to read or write. Ryan on the other hand, who had 18 years' service, insisted that Pilaski was a competent track motor car operator. He advised further that Pilaski had driven them to Geraldton without incident and that he did not require to be told to watch for vehicular traffic at crossings.

Delano admitted that he had been assigned by Ryan to watch the rear. He was a man with 7 years' service and knew the territory well. Under questioning he stated that he had known where they were just prior to the accident because of the landmarks, but since he had been posted to observe behind he could not be expected to watch ahead also. He had spoken to no one since the start of the return journey and it developed that he had been smoking at the time of accident.

Sikorsky, a man of 6 years' experience, had no assigned duties on the return journey. He admitted that he had been dozing due to the warmth of the weather and was not aware of trouble until he heard someone shout just before the impact. He did say that the brakes had not worked well on the trip into town.

As a result of the investigation the following discipline was approved and administered:

Section Foreman Ryan	Demoted to sectionman. Time out of service to count as suspension. Violation M/W Rule 952.
Sectionman Pilaski	30 demerit marks. Time out of service to count as suspension. Violation M/W Rule 969.
Sectionman Sikorsky) Delano)	Assessed 10 demerit marks each. Violation M/W Rule 969.

When the discipline assessed was made known to the employees they took vigorous exception to it, and were supported in their stand by their union. In addition, both Ryan and Pilaski claimed that the railway had conducted its investigation at an unfair time.

Questions:

1. Do you agree with discipline assessed? If not, why?
2. Why did the employees object to the discipline?
3. Why did Ryan and Pilaski consider that the investigation had been conducted at an unfair time?
4. Do you agree that the railway should condone a practice of leniency towards its track employees in isolated areas?
5. What might be done to reduce time lost in providing such track forces opportunity to cash checks, shop, and visit post offices?. . . .
6. Do you think Ryan was a good foreman?
7. What policy changes, if any, would you institute to prevent recurrence?

*Copyright by CNR. This case is hypothetical, but based on fact. Names of persons are fictitious. (Text slightly abridged.)

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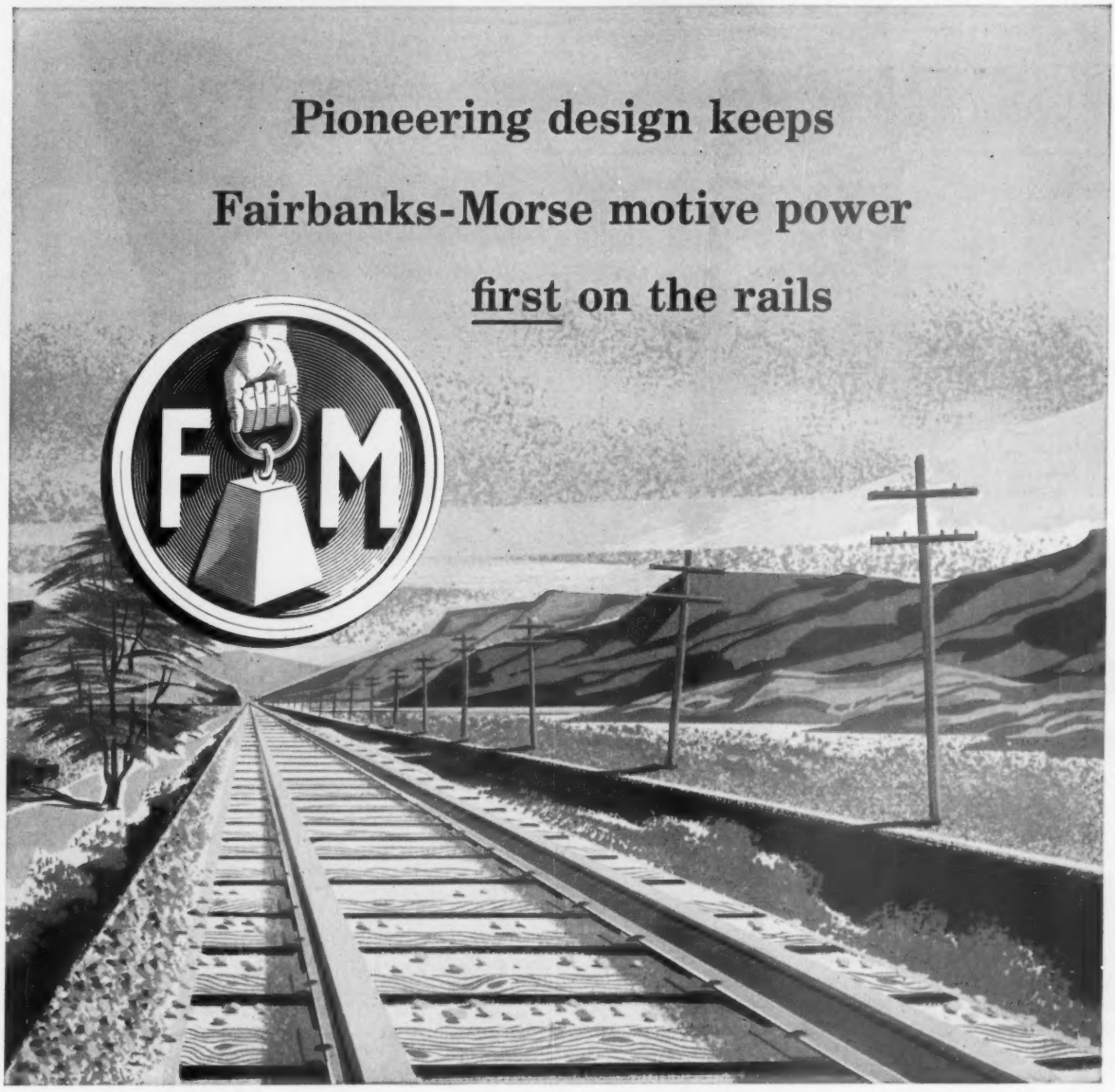

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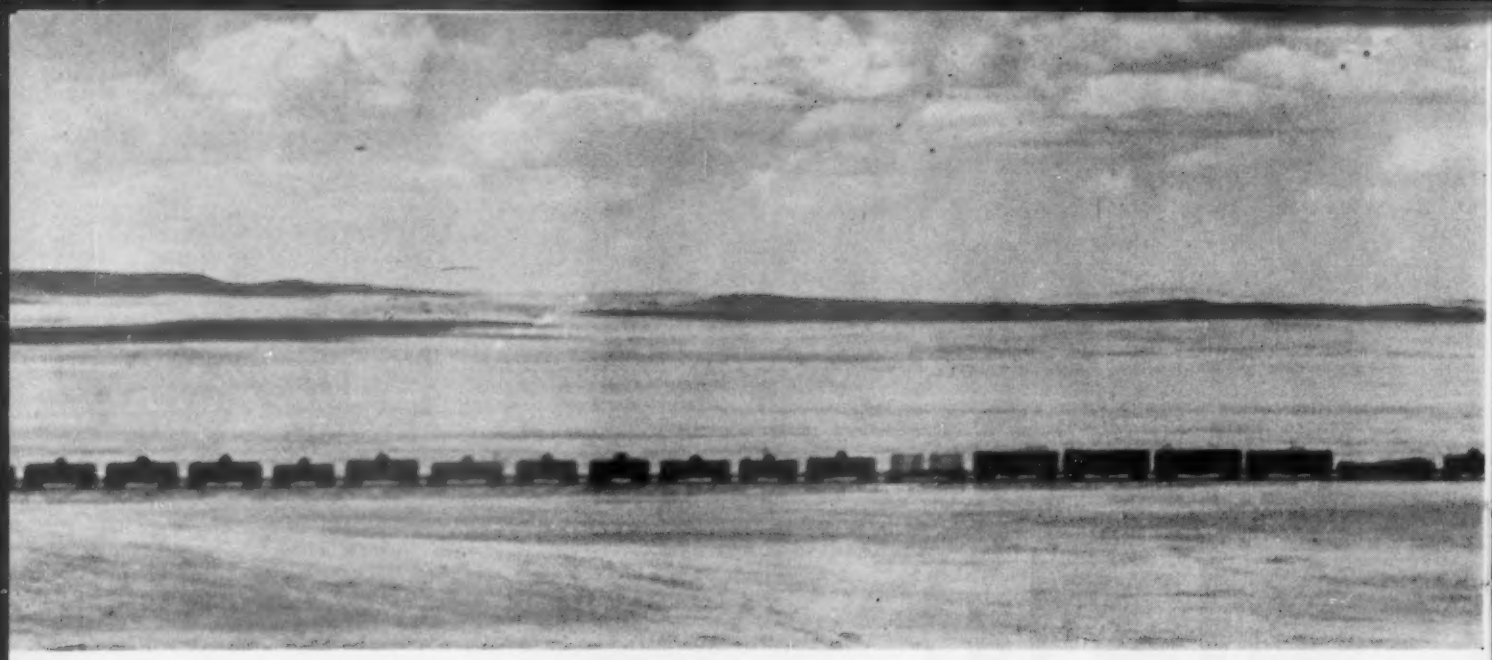


Special problem gets attention as . . .

Hustle Cuts Tank Car Hot Boxes 50%

Tank car owners have relatively little control over the regular maintenance performed on their cars. Unless cars are returned to home shops for heavy repairs or upgrading, it is usually at least three years between inspections in owners' shops. This makes it difficult for the private car lines to be sure that prescribed maintenance operations are performed, and puts the responsibility for routine inspection and light repairs on the railroads.

Bad conditions have prevailed particularly in the West. On one major western trunk line, tank cars in 1954 accounted for about 10% of revenue cars handled, but produced 37.4% of all hot boxes on that line. Other roads were having similar difficulties. As a result, a joint committee of railroad and private car line representatives was set up in California to deal with the situation.

Typical of its success is the experience recently reported by the railroad with the bad 1954 record. In 1955 this percentage was cut to 27.7 and in 1956 to 17.1. The percentage for 1957 should be even lower, since hot boxes reported for January, February and March were only 35, 43 and 77 as compared with 99, 76 and 99 for the same months of 1956.

COVER PICTURE: Baytown, Tex., refinery cleaning racks. Photo Esso Standard Oil Company.

The methods by which committee members achieve these results are simple: They emphasize use of the proper equipment, such as modern bearings and lubricators, and make sure the equipment is properly serviced and maintained.

The west coast committee is one of several joint committees representing railroads and private car owners in various sections of the country that has been formed to attack this problem. Of the approximately 125,000 tank cars in the U.S. and Canada, the railroads own only 5.8% of the total, though they own 89.6% of all revenue cars.

Only the Southern Pacific, the Union Pacific and the Santa Fe among Class I railroads own more than 1,000 tank cars a piece. Although there are several oil companies with large fleets of private tank cars for their own use, the bulk of tank cars are owned by private companies such as the Union Tank Car Company (52,500 cars) and the tank car division of General American Transportation Corporation (48,500 cars).

The West Coast committee stresses that control of tank car hot boxes requires close railroad supervision of all work pertaining to journal boxes. The need for this special attention to journals on private owner cars is indicated by the report that 18.5% of all hot boxes during April 1957 on the Los Angeles division of one road occurred on privately owned tank cars.

Many maintenance men, though not all, feel that tank cars are particularly susceptible to hot boxes. Some of the reasons suggested to account for this are: Tank cars have a high capacity and usually operate with a full load, which puts heavy strain on the bearings; the high center of gravity in tank cars may contribute to hot boxes by moving the axle out from under the bearing and thus dislodging the waste or pads; tank car use fluctuates according to seasonal demand, and tank cars are often hurried into service after a long layoff, sometimes without proper maintenance and servicing.

Effects of Climate

Climate, particularly heat, generally is believed to have an effect on frequency of hot boxes if the lubrication level is not properly maintained. Some large tank car users report more difficulty in the hot and dusty parts of the country than elsewhere; other users feel that all parts of the country are equally bad for hot boxes. The users agree that cars can be made to operate properly in any climate or type of service if proper equipment is used and maintained for the service expected.

The West Coast committee on hot boxes finds that rough switching may be a

contributing factor if the shock causes wedges to be displaced and packing or lubricator pads to shift. Modern draft gears to cushion shocks and modern lubricating systems installed on some cars are helpful in controlling hot boxes from this source. Old trucks under tank cars also contribute to hot boxes. The committee urges car owners to retire or convert these trucks as quickly as possible.

Controlled-clearance bearings, the committee states, may cause trouble unless the instructions for installation are clearly understood by car men before the bearings are installed. A one year study is proposed to determine how much improvement in service can be expected from this type of bearing. Also, cartridge type bearings are now being tested in service, with favorable results reported by several roads.

The large number of lubricator pads now in service, the committee finds, are effective in minimizing hot boxes, but dirt must be kept out of the journal boxes if the pads are to perform satisfactorily. With dirt in the box, neither pad nor waste lubrication is effective. Also, the committee's experience indicates that with lubricator pads a rear seal is required to keep from losing oil and running the risk of lubrication failures.

The committee is composed of representatives of both the railroads and the private car lines because both have a real stake in finding the solution to the hot box problem. As one officer of a private car line put it, "Our income comes from our cars being in use by our customers. We don't make anything off a car that is tied up on a rip track waiting for new journals."

Some of the larger private car lines have been installing lubricator pads since 1955, in an effort to find equipment that would provide trouble-free operation. Even so, the percentage of pad-equipped tank cars is probably much lower than the industry average of 15 per cent for all classes of revenue cars.

Although the AAR Mechanical Division Committee on Lubrication of Cars and Locomotives requirement for lubricating devices for installation on all new or rebuilt equipment since August 1 has been "conditionally approved types or types approved for limited test application," none of the lubricator pads has yet had sufficient testing to receive unconditional approval. Four lubricators have the "conditional approval," and 16 others have been "approved for test."

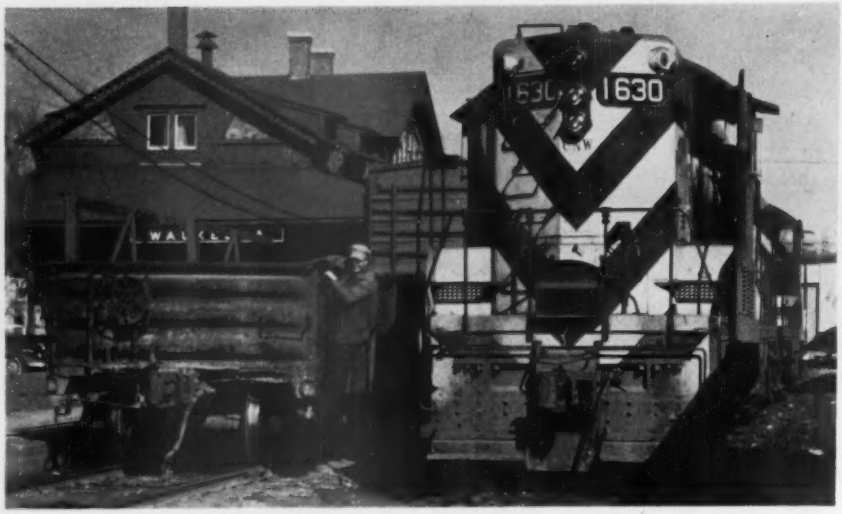
Many private owners feel that they are in no position to test the new devices themselves and so will probably wait until the committee grants unconditional approval before they became heavily involved in the major upgrading program required to replace all waste-type packings by 1960 as required by the committee.

The leakage of wine from privately owned tank cars is a frequent source of claims in California. This leakage usually occurs at the outlet valve and cap. When leakage is discovered, the car has to be set out so that the valve may be tightened. One solution to the problem is a new type of valve being developed and applied by several tank car companies. Other companies are thoroughly overhauling the outlet mechanism as cars are being returned to be shopped. The easiest solution to the problem is to make sure that all shippers load tank cars exactly according to instructions.

Bonus Plan's Aim: 'Team Effort'

If the Chicago & North Western's gross freight revenues pass a predetermined mark in 1957, one which its officers think won't be hard to beat, all traffic department personnel rated chief clerk and above will get a bonus. The system, so far as the North Western can determine, is unique among railroads.

This being the first year of the plan and with the road undergoing a number of changes, the North Western is reluctant to reveal specific goals, percentages, etc. But here, basically, is how its traffic department bonus plan shapes up:



This car may bring a bonus

Who Gets Bonus

Participating in the plan are all employees of the traffic department from the level of chief clerk upward. Included are persons who do not sell freight service directly—industrial development men, for instance, and the road's advertising manager.

Passenger traffic men also are included. In setting up the plan, the C&NW management took the position that its passenger salesmen are valuable freight salesmen as well. The bonus plan doesn't, however, take passenger revenue (or loss) into consideration.

Bonus payments will be made on all gross freight revenues above a predetermined goal. With the future of LCL hard to judge—the C&NW dropped its LCL pickup-and-delivery service early this year—revenue from LCL was left out of the bonus determination. Rate increases already effective in the Ex Parte 206 case are included, but any further increases this year will not be taken into account since they weren't figured into the base.

The bonus base figure is "several millions below your forecast for the year 1957," according to a circular explaining the incentive plan to traffic personnel.

Freight revenues above the base figure will be shared on a rising percentage basis. In figuring the bonus base, as in most computations, fractions or small amounts are rounded off to make administration as simple as possible.

How Payments Are Made

Participants in the incentive plan will receive their shares of revenue earned in excess of the bonus base in direct ratio to their annual salaries. A "unit" scale of salaries has been set up to simplify determination of the individual's payment.

Basic salaries in the traffic department are not affected by the bonus plan, except that for bonus purposes salary "units" on all positions are frozen to their level of last January 1, when the plan began.

Bonus payments could amount up rapidly if the North Western has a good year. Gross freight revenues just a few million over the traffic department estimate for 1957 probably would bring traffic men with average earnings a bonus running into four figures.

Reports are made periodically to participants showing, by "thermometers," progress toward reaching both the year's revenue forecast and the bonus base. Each month's quota of the bonus base has been allocated on the basis of a three-year monthly revenue average.

C&NW officers chose this particular plan from among all that are available for several reasons, the principal one being that it forms the traffic department into a "team" and doesn't put salesmen or offices into competition with each other.

Indeed, the C&NW feels that this is about the only workable incentive plan. In its opinion, this plan offers the least possible difficulty in allocating payments.

For the time being, the incentive plan will be applied only to freight traffic, and probably then only if it demonstrates a reasonable ability to increase revenues. But some C&NW officers are thinking ahead to the days when the road will have what they consider a "good base" of passenger service—to which the same kind of traffic-getting incentive system might well be applied.

BACKGROUND

Why most roads have shied away from bonus plans

- How do you arrive at a fair and impartial allocation of commission or bonus pay? Many persons, including operating personnel, can influence a shipper's reaction for or against rail service.
- How do you assign sales credit when a company's headquarters are in one city, and its plants scattered elsewhere? Selling at the local level is important, but company policy affects loadings, too.
- What about the inside man, the rate man, whose work can and does have a direct effect on traffic? Management rate policy can influence sales success up or down, irrespective of what the traffic man does.
- As traffic fluctuates with overall business conditions, how can the annual or monthly "base" be adjusted accordingly, without disturbing sales force morale?
- What happens if, in a move to increase net, management decides to cut gross by trimming money-losing services or shifting train schedules—things over which the traffic man has no control but which can affect greatly his work in the field?

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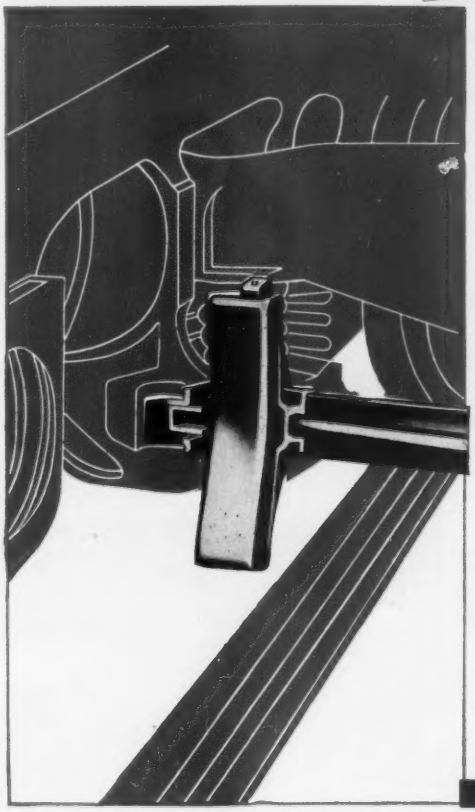

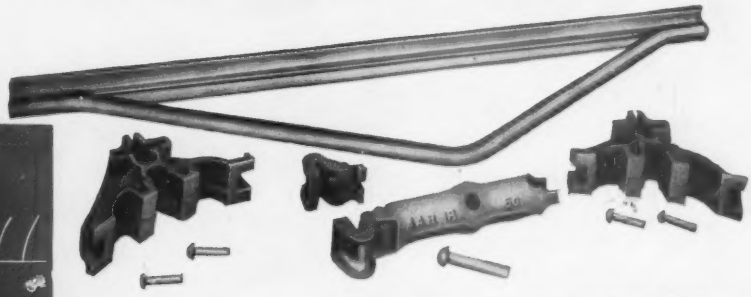

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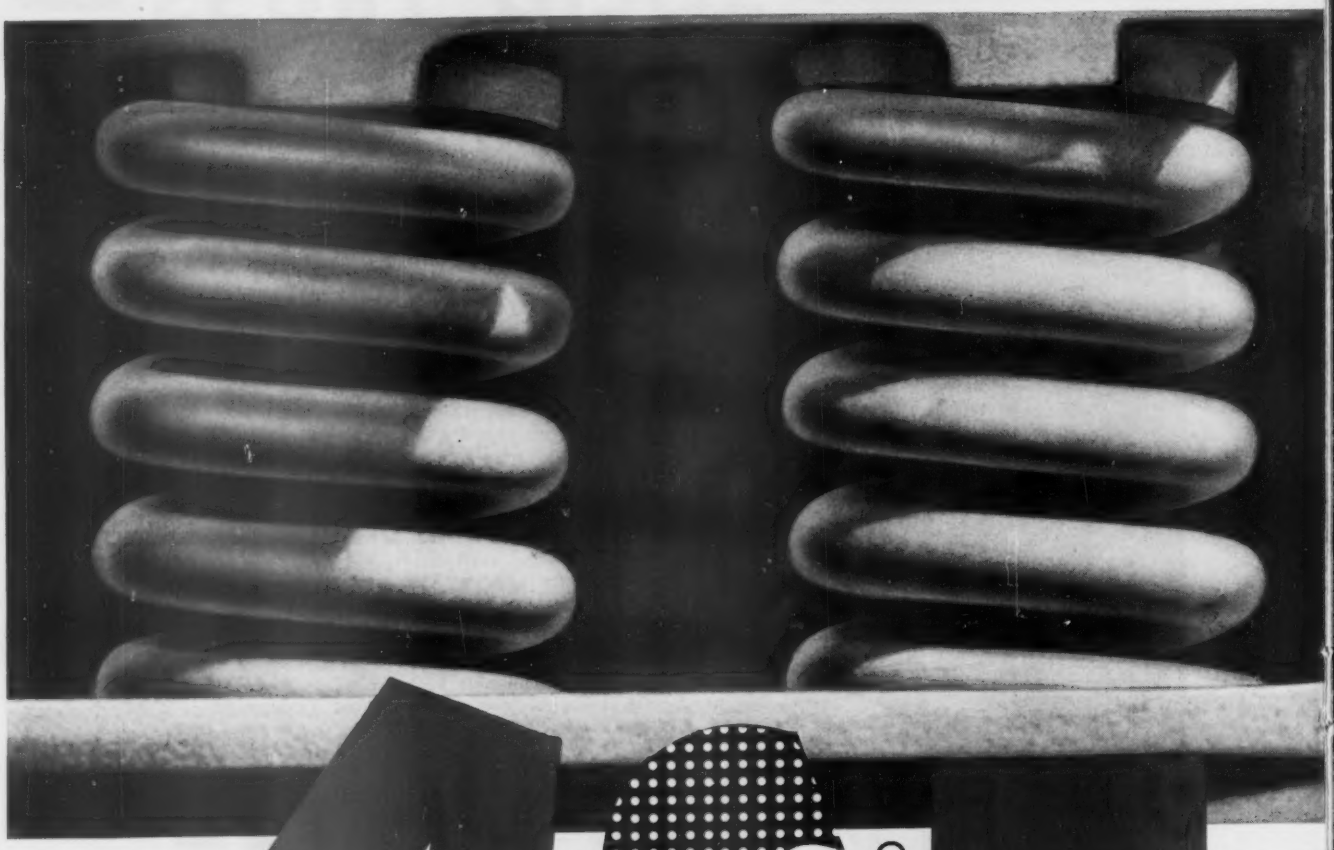

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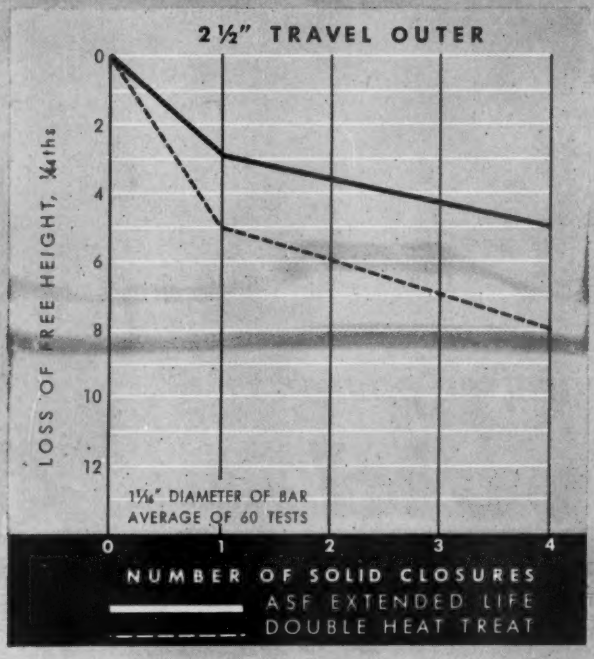

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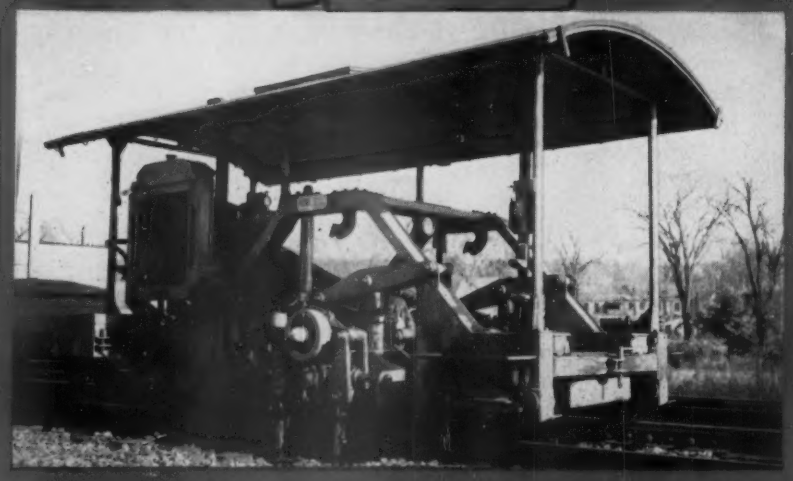

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SUPERVISION SPEAKS UP . . .

'What We Expect of Management'

On Wednesday morning, September 25, at the Conrad Hilton Hotel in Chicago, a division engineer will stand before the annual convention of the American Railway Bridge & Building Association and read an answer* to the question: What should the supervisor expect from management? Here is the gist of it:

Management is a group of individuals united in the common purpose of directing human and material resources toward a common goal. That goal is to maintain the economic health of the property. Economic health is appraised in terms of net income. Net income is produced by getting things done through people, for people, at a profit. Supervision represents and is management to the people they supervise. It is through the supervision that the policies, objectives and procedures of a company are communicated to the employees.

This is what supervisors ask of management:

1. Disclose Policy

Supervision should expect that top management will make its overall policy known to it and it wants to be told the direction that policy is to be applied.

2. Better Communications

Supervision needs clear, concise and unobstructed lines of communications up, down, and across. (All supervisors have heard things through the "grapevine" long before they were officially told, have been embarrassed when men working under them knew something that the supervisors didn't know but should have known). Information from management—sufficient information to make supervisors feel a part of management—is desired. Good morale exists when a man has pride in his company and that pride is developed by effective communication.

3. Specific Programs

Insistence on realistic, written annual programs of maintenance and capital expenditure work is expected. Proper programming is essential. It is necesary so that there will be continuity of employment for a basic labor force to provide a cadre of trained personnel for leadership when required maintenance programs and capital improvement work are expanded. It is axiomatic that in the planning and direction of the work full consideration be given to the establishment and maintenance of good labor relations. Sufficient clerical help to maintain essential but not elaborate control over operations is a pre-requisite of planned supervision. Recognition of the importance of adhering to the programs is one of the basic desires of a supervisor, and includes, insofar as it is practicable, the fervent desire that requests from other departments for non-program work (that is largely based on expediency) be held to an absolute minimum.

4. Good Tools

Sympathetic consideration of requests for power equipment should be expected. When budgetary limitations prohibit the fulfillment of the request an explanation of why the equipment was not provided is a reasonable desire. It is otherwise frustrating and discourages thinking along the lines of mechanization and equipment improvement.

5. Best Public Relations

A supervisor's standing in the community is reflected by the opinion held by the community about the railoard he represents . Management should be expected to maintain good public relations and be a good neighbor in the communities along the lines.

6. Safety Programs

Insistent demands that all concerned make a serious and a sincere effort to maintain an effective accident prevention program is needed. This requires a program that is specific, practical and of genuine interest to the men, based on knowledge of accident-producing conditions found in railroad work. A supervisor should expect that he will be allowed to correct all unsafe conditions or practices with reasonable promptness or that a logical explanation for the delay or inability to

**A report by a committee of which N. H. Williams, division engineer of the Delaware & Hudson at Oneonta, N.Y., is chairman.*

Top Officers Also Will Speak

Management, too, will have a chance to speak its mind at the Bridge & Building convention which will be held concurrently with that of the Roadmasters' and Maintenance of Way Association at Chicago on September 23-25. At a joint session of the two groups on September 23, D. W. Brosnan, vice-president operations of the Southern, will speak on "Facing the Facts." At another joint session on the afternoon of the following day W. A. Grotz, president of the Western Maryland, will discuss "Horsepower and Horse Sense."

Among other addresses to be presented during the joint sessions, G. M. Magee, director of engineering research of the Association of American Railroads, will tell "How Research Helps Track and B&B Men," and Donald M. Smith, regional director of the Railroad Retirement Board, will discuss "The Unseen Labor Force and What You Can Do About It."

Committee reports on subjects of current interest will predominate during the separate sessions of the associations. The final event will be a joint inspection of the AAR's Central Research Laboratory at Chicago.

make the change be given to the individual who reported the unsafe condition.

7. Good Pay

Supervision must be practiced as a profession. It is an art and a science. It requires skills. It must analyze and form sound conclusions quickly and accurately with vision to foresee the consequences of these decisions. Therefore, remuneration commensurate with its professional attainments and performance so that it can keep abreast of the high wages, overtime rates, and fringe benefits paid to the workers is a reasonable expectation. A junior executive's salary should be sufficient to maintain this status in his community.

8. Incentive to Develop

Supervision wants management to maintain a climate in which it can grow and develop. The maintenance of a high degree of morale within the organization should be expected. Incentives and motivations for self-development are required. Individual development of people within the organization should be encouraged and appraised. Supervision hopes that management will undertake a continuing and effective program to insure the development of people within the organization. It should expect that membership in professional groups and active participation in committee meetings, with a reasonable amount of traveling, will be encouraged by top management and that it will be allowed to make educational visits to properties where specialized operations will provide information of value.

9. Let Merit Prevail

Supervisors in contacts with men on the line have seen merit and ability sidetracked so that seniority would prevail. A supervisor should expect that selection for added responsibilities will be based on merit, ability and performance. He expects commendation for superior performance of duty.

Job descriptions covering the duties of each grade of supervision are necessary. Each job description should be specific, clearly defining the responsibility, authority and accountability of each grade, and the establishment of realistic performance standards is expected.

It is obvious that management people are becoming increasingly conscious of the nature of their responsibilities, and it is evident that they are more and more determined to fulfill these responsibilities effectively. It is expected that the ideal steps to be followed in getting things done through people will be considered, but supervision is aware that such steps as are necessary to secure results must be used.

A summary of what the supervisor should expect from top management is contained in this quotation from Clarence Francis, former chairman of the board of General Foods: "I believe the greatest assets of a business are its human assets, and that the improvement of their value is both a matter of material advantage and moral obligation; I believe, therefore, that employees must be treated as honorable individuals, justly rewarded, encouraged in their progress, fully informed, properly assigned, and their lives must be given meaning and dignity on and off the job."

Railroading After Hours with Jim Lyne

UNION SHOP AND CAR BUYING—A PRR agent at Lancaster, Pa., John J. Myers, asks me what difference there is—as far as faithfulness to principle is concerned—between accepting government assistance in financing freight car purchases; and in railroad acceptance of the so-called "union shop." The latter seems to him more of a sacrifice of free-enterprise principles than the former would be.

Mr. Myers says he was required, "as a condition of continued employment" to contribute support to an organization to which he was opposed on moral, religious and political grounds. The idea of the union shop had been accepted, however, by Congress and the Supreme Court and (perhaps reluctantly) by most railroads. So he had to accept it too, or starve, and he decided not to starve.

The question Agent Myers raises is as tough to answer as any ever put to me. I suspect that most railroads which acceded to the union shop did so in the belief that there was no practicable alternative, whereas a fewer number of them, so far, are convinced that there is no practicable alternative to government financing of equipment. The whole subject deserves more discussion than it has had yet.

THE CHILD GOT HOME—Back in the early twenties the Rock Island had two eastbound night trains serving southern Kansas—a slow one and a fast one. In the station at Wichita one night the conductor of the fast train saw a little girl, crying. She was going to Kechi, nine miles away. She had missed the slow train, and the fast one didn't stop at Kechi. The conductor explained the situation to the engineer and the engineer said:

"It just so happens that there is a crankpin on this engine that is running a little warm and I expect to stop at Kechi to take another look at it."

He did so and, while he was looking, the conductor delivered the child to her anxious relatives at Kechi. (Thanks to Chet Solomon of the UP accounting department at Omaha for telling me the story. I suspect that Chet's father, at that time running an engine for the RI, was the engineer involved.)

RAILROAD LINGUISTS—L. W. Moody of the Belfast & Moosehead Lake (up in Maine) tells me that General Auditor Hall of his company "is no slouch in both Spanish and French"; and that he carries on a lively correspondence with railroaders in both Mexico and Cuba. Mr. Moody draws attention to the bilingual facility of both CPR and CNR train crews in Quebec province.

I have a tip, also, that there is an operating vice-president of an important railroad who has made himself such an adept at the Spanish language, that he can even take shorthand in the language—but I'm not going to print his name until I check.

TOASTMASTERS—Walter C. Gard of Hamilton, Ohio, is a strong advocate of the "Toastmasters" organization—which gives its members constant practice in effective public speaking. He believes that there are many railroad people who would benefit from, and enjoy, the experience the organization offers; and suggests that those interested write to Toastmasters International, Santa Ana, Cal., for the "Basic Training Manual" ($1.10).

NICKNAMES—One of my colleagues thinks I ought to try to bring out some of the railoads nicknames, derived from their initials (such as "Old Woman" for the now defunct NYO&W). I resist this suggestion because most of these nicknames are derogatory, and even libelous. If anybody knows of some of these names that are good-natured and truthful, as well as amusing, I'll be glad to pass them along.

ALCO FREIGHT CAR TRUCK SPRINGS GUARANTEED FOR 10 YEARS

Uniform quality ALCO guaranteed springs are made to exceed AAR specifications; now you get even greater protection against replacement need.

On railroads around the world, ALCO springs have proved themselves again and again. They are so time-honored, ALCO can afford to guarantee these freight car truck springs against breakage for at least ten years.

ALCO FREIGHT CAR SPRING has date of manufacture stamped on coil. If it breaks within a period of ten years from that date, a new spring will be furnished free of charge by ALCO.

This ALCO guarantee applies to these springs*:
(Standard AAR Designs)

1. 2½-in. travel
2. 3 1/16-in. travel
3. 3 11/16-in. travel
4. 1915-D
5. 1936-D-2

*Except springs for brine refrigerator cars.

Order ALCO guaranteed freight car springs for your next requirements. You will be assured of top quality and superior service by one of the nation's largest railroad suppliers. Call your nearest ALCO Sales Representative or write Spring & Forge Division, Dept. SGR-3, P. O. Box 1065, Schenectady 1, New York.

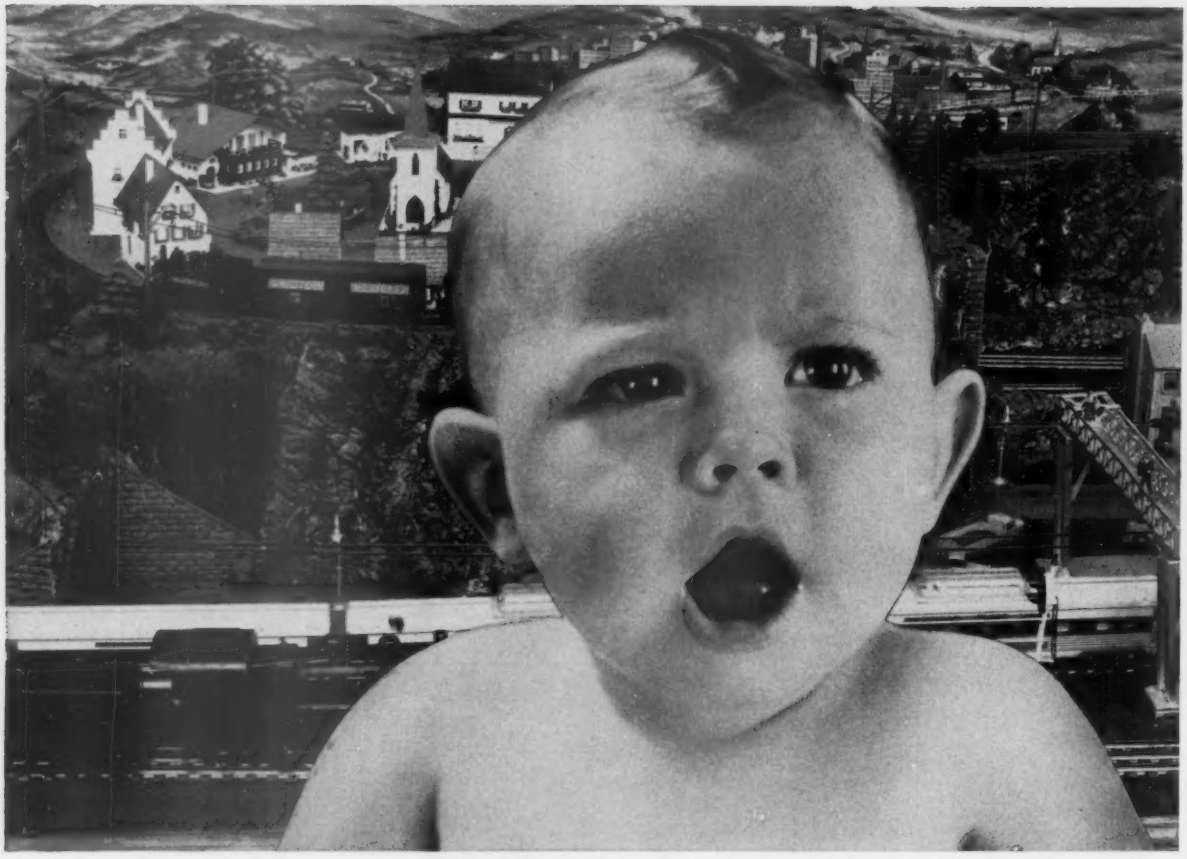
ALCO

ALCO PRODUCTS, INC.

NEW YORK

Sales Offices in Principal Cities

Locomotives · Diesel Engines · Nuclear Reactors · Heat Exchangers · Springs · Steel Pipe · Forgings · Weldments · Oil-Field Equipment



"You Mean Bird Self-Sealing Tie Pads Can Reduce My Cross Tie Costs 59%?"

Oh baby! That's a *real* saving. And it's as easy as ABC to prove for yourself:

A. The average installed cost of a new main line cross tie, including cost of original tie plus labor, is approximately $7.00*. With a normal life of 20 years, this amounts to 35¢ per year.

B. By sealing out destructive moisture and abrasive materials from under-plate and spike-hole areas, Bird Self-Sealing Tie Pads increase the life of the average tie by at least 15 years. At 35¢ per year, this saving amounts to $5.25.

C. The cost of obtaining this saving? About $1.12 for two five-ply 7¾" x 13" Bird Self-Sealing Tie Pads. *Net saving is $4.13 — or 59% of the installed cost of the original tie.*

Bird Self-Sealing Tie Pads are the *only* tie pads which have *proved* their durable and effective seal with the tie through years of in-track service. Want the whole story? Write to Bird Tie Pads, Department HRA, East Walpole, Massachusetts.

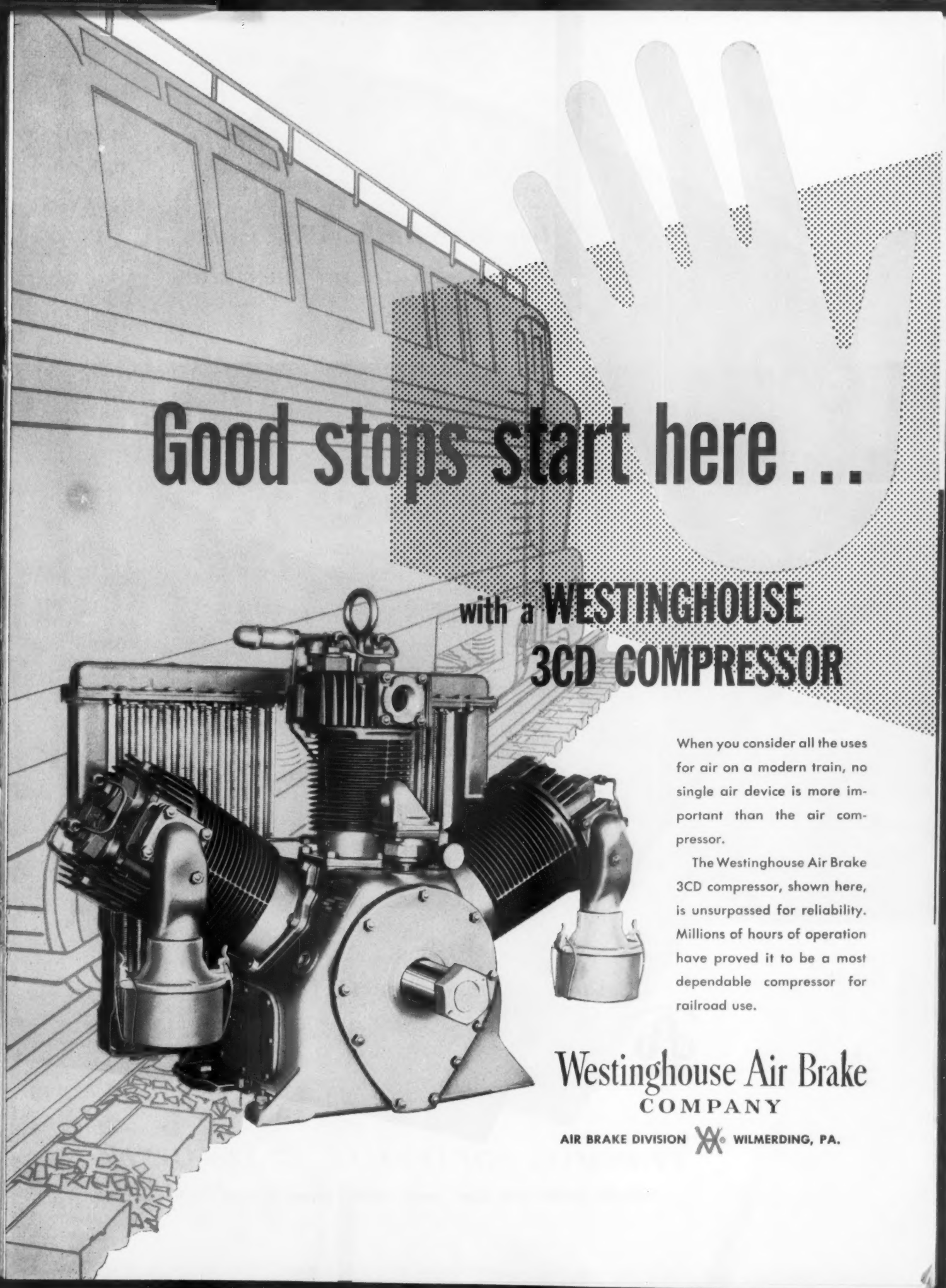
*These figures represent the most conservative minimum. If your costs are higher, savings are proportionately higher.

Bird Self-Sealing Tie Pads Are Recommended For:

Bridge Decks • Curves • Switch Timbers • Highway Grade Crossings and Other Paved Areas • Crossing Frogs • Insulating Joints • With Smaller Tie Plates • Pile Cutoffs • Through Station Platforms • Out-of-Face Installations in Rail-Laying Programs • Locations where tie life is short or replacement costs are high.

Buy the Best... BIRD & SON, inc. Established 1795 *Buy BIRD*

Unretouched photograph of cross section of tie shows under-plate and spike-hole area after 10 years' protection by Bird Self-Sealing Tie Pads. Destructive moisture and abrasive materials could not penetrate the seal.



When you consider all the uses for air on a modern train, no single air device is more important than the air compressor.

The Westinghouse Air Brake 3CD compressor, shown here, is unsurpassed for reliability. Millions of hours of operation have proved it to be a most dependable compressor for railroad use.

Westinghouse Air Brake
COMPANY

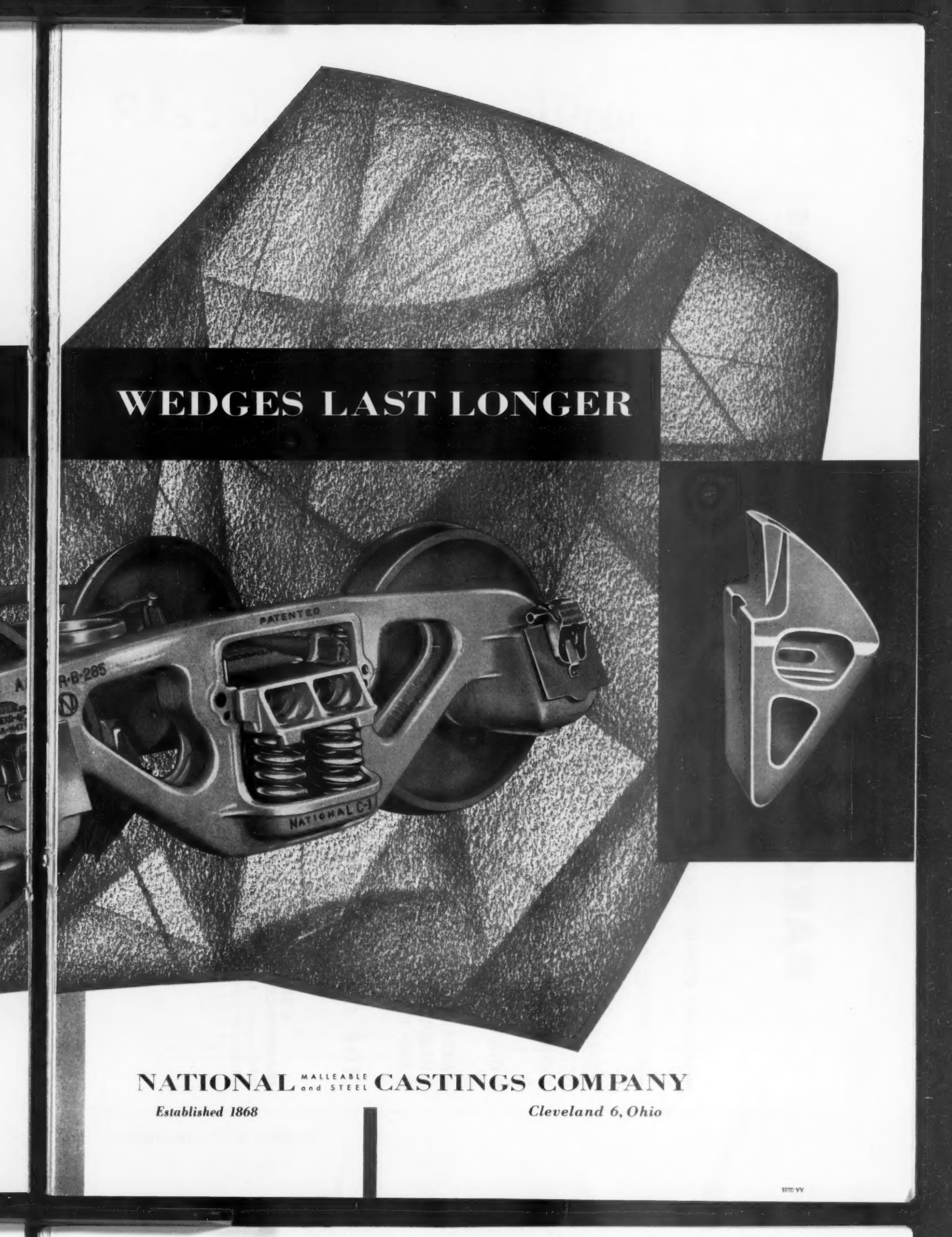
AIR BRAKE DIVISION WILMERDING, PA.

There's Improved Railroading with National Specialties

Reason: C-1 TRUCK

GEARED TO PROGRESS
P R I
MEMBER

COUPLERS • YOKES • DRAFT GEARS • FREIGHT TRUCKS • SNUBBER PACKAGES • JOURNAL BOXES



NATIONAL MALLEABLE and STEEL CASTINGS COMPANY

Established 1868 *Cleveland 6, Ohio*

BARCO Steam Heat Connections

for Locomotives and Passenger Cars

- LIGHTEST CONNECTION MADE
- ALL WELDED CONSTRUCTION
- GREATEST STEAM CAPACITY
- CHEAPEST TO MAINTAIN
- ONLY 2 MOVING POINTS
- METAL WEARING PARTS ARE HARDENED ALLOY STEEL AND CHROMIUM PLATED

THE GASKETS LAST!

STOP

UNNECESSARY EXPENSE

Available railroad records will indicate the number of steam heat connection gaskets used each season.

Barco connections only have two gaskets which last a complete heating season without replacement.

Reports from Users

Longer Service . . .
"Tests have proved that Barco Connectors withstand diesel dry steam better and give longer service. Annual removal and repairs program has proved Barco superior."

Less Maintenance . . .
"We are installing Barco connections as rapidly as possible because they require so much less maintenance."

Makes Test . . .
"We started a test of Barco Connections on our road. A year later we ordered another sixty and only one was removed in a year."

Full Year Without Attention . . .
"Barco 2½" Connections on Diesel locomotives are checked in the fall and, barring accidents, they go the full year without attention."

2 Years without Gasket Change . . .
"Barco Steam Heat Connections on our _____ streamliner have gone more than two years without a gasket change."

BARCO MANUFACTURING CO.
501K Hough St., Barrington, Illinois
In Canada: The Holden Co., Ltd., Montreal

FOUNDED 1908
BARCO
PRODUCTS BACKED BY EXPERIENCE

Season-to-Season Service without Maintenance

RRs Swing to 'General Promotion' Ads

More emphasis, and more money, is going into campaigns that tell the public of railroad progress; roads outspace airlines 3-to-1 in the nation's magazines.

By Frank E. Shaffer
Business Editor
Charleston, W.Va., Daily Mail

A quiet new trend is showing up in railroad magazine advertising. The move is toward more general promotion copy, and figures on 1956 campaigns—just now compiled by Leading National Advertisers, Inc. —point up how the shift is taking place.

Railroad passenger advertising in general magazines—LNA figures do not include business or trade magazines—was down 10% last year. Freight and industrial development edged upward, and general promotion shot up by 50%. While this later boost stemmed largely from a Chesapeake & Ohio campaign, it was also a continuation of a trend going back at least to 1954.

This shift, of course, is only one facet of the overall magazine advertising pattern pieced together by LNA. Railroads continue to invest more in magazine pages than the ad-minded airlines—unlike the newspaper situation where airlines outspend railroads by a wide margin (Railway Age, July 1, p. 15). The significance of new railroad emphasis on general promotion is that it provides an important clue on how management may invest future advertising dollars.

The LNA figures indicate the railroads placed a total of $6.4 million in magazine advertising in 1956. The Union Pacific retained its leadership as the largest magazine advertiser among railroads by increasing to $695,000 from $578,000. Among individual lines, the C&O moved into second place with a $484,000 budget, three times the size of its 1955 allocation.

Actually, the second largest magazine budget in railroad circles in 1956 was the AAR's $522,300. Pullman Company was down slightly at $509,400, while Railway Express dropped sharply to $463,700 from $522,400.

For the industry as a whole, railroads spent slightly more in magazines in 1956 than they did the year before. This increase, though modest, was just the opposite of the airline approach. Magazine outlays by air carriers dropped from $3.6 million to $2 million. This cut was made entirely in passenger advertising, because air freight and air express ad dollars were both up 25%.

Here is how the air and rail carriers allocated their advertising budgets between magazines and the newspapers last year:

	Rail	*Air*
Magazines	$ 6,494,300	$ 2,028,300
Newspapers	6,934,200	17,373,400
Total	$13,428,500	$19,401,700

(Mention of Greyhound is necessary to make the 1956 comparison complete. Under its new president, Arthur Genet, the bus line pruned its magazine appropriation sharply, took $300,000 from newspapers and moved into spot television campaigning with $639,000.)

"CZ" Keeps Its Budget

Western railroads, long considered leaders in the campaign for the travel dollar, generally subdued their passenger advertising in 1956. The "California Zephyr" retained its distinction as the only passenger train with an advertising budget of its own.

The Burlington, Western Pacific and Union Pacific all invested more magazine money on passengers in 1956. Declines were registered by the Milwaukee, Rock Island, Great Northern, Missouri Pacific, Northern Pacific and Southern Pacific.

While the Santa Fe was expressing its continued faith in long-haul passenger

How They Ranked in 1956

Railroad Magazine Advertising

AAR	2	$522,300	MP	16	$144,500
AT&SF	6	448,100	NYC	17	130,600
B&O	9	344,000	NKP	23	67,400
CN	21	90,700	N&W	10	228,900
CP	8	371,300	NP	11	198,500
CGa	29	27,800	PRR	24	62,000
C&O (a)	4	484,800	Pullman	3	509,400
CB&Q	19	107,000	RDG	26	53,200
CMStP&P	20	92,600	Ry. Exp.	5	463,700
CRI&P	22	79,100	SP	7	373,900
Cal. Zephyr	27	41,800*	Southern	15	176,500
DL&W	28	37,300	UP (b)	1	695,100
Erie	14	188,400	Wabash	18	111,900
GN	12	194,200	WMd	25	58,700
			WP	13	190,200

(a) Includes Greenbrier Hotel, White Sulphur Springs.
(b) Includes Sun Valley, Idaho.
* This budget not included in totals of CB&Q, D&RGW, WP.

Magazine Transportation Advertising

(Thousands of dollars)

		1956	*1955*	*1954*
Railroads	Passenger	$2,870.6	$3,209.6	$3,254.7
	Freight-express	1,374.5	1,247.3	1,003.3
	Industrfial	845.3	697.7	735.9
	General (a)	1,403.9	865.5	771.7
	Total	$6,494.3	$6,020.1	$5,765.6
Airlines	Passenger	$1,388.5	$3,212.5	$2,884.9
	Freight-express (b)	639.8	434.3	396.3
	Total	$2,028.3	$3,646.8	$3,281.2
Buses	Passenger	$ 493.2	$ 915.8	$ 721.9
	Freight (c)	12.0	11.9	11.1
	Total	$ 505.2	$ 927.7	$ 733.0
Trucks	Movers	$ 996.2	$ 646.3	$ 406.6
	General	183.2	157.7	163.0
	Total	$1,179.4	$ 804.0	$ 569.6

Data: Leading National Advertisers, Inc., 1956.
(a) includes AAR budget.
(b) includes ATA Air Parcel Post campaign.
(c) Greyhound.

business with a new fleet of high-level cars, the road apparently is shifting its ad emphasis. Santa Fe's investment for passenger traffic has declined from $711,000 to $515,000 to $447,000 in the past three years. Other media, including billboards and on-line TV, have gained.

The Great Northern also curtailed, from $206,000 to $96,000, its magazine advertising on passengers last year. But the total company budget of $194,000 was down only slightly. Passenger money was switched into freight and general promotion, and reports from the road indicate it is happy with what this new approach is accomplishing.

Missouri Pacific upped its magazine outlays from $88,000 to $144,000 in 1956 but cut passenger promotion in favor of a new expenditure for freight and more money for industrial development and general promotion.

Western Pacific, at $102,000 for passengers, was up 25% but freight money doubled to $83,000. Industrial development money, which had been at $24,000 for two years, was cut to $4,000 last year.

Wabash was the only new passenger advertiser in general magazines in 1956. Its investment was $18,500 but its total budget of $111,900 was almost double the 1954 figure. Lackawanna and Reading, meanwhile, used mass magazines to advertise freight service for the first time in at least three years.

In the UP's use of magazines last year, that road added 15% to the 1955 budget of $419,700. An extra $12,000 was put into Sun Valley's 1955 budget of $103,000, and general promotion was raised $3,000 to $59,500.

Baltimore & Ohio made a strong move for new industrial plants during 1956. By doubling the 1955 budget, the B&O became the largest spender (at $160,000) for industrial development, moving ahead of the Norfolk & Western to lead this category. The only other line over $100,000 was the Southern with $143,000, down moderately for the third year.

New York Central, like a lot of other roads, shuffled its magazine advertising last year. NYC showed a modest passenger increase, freight volume was virtually unchanged, industrial development took a modest $5,000 and general promotion received $45,000.

C&O Pushes 'Progress'

The outstanding gain in 1956 magazine advertising was shown by the C&O for a general promotion campaign built around the theme of "Progress on Chessie's Railroad." From a $50,000 total budget in 1954 and a total absence in 1955, the 1956 figure was a spectacular $484,000. Of this budget, $336,000 was spent for general promotion. Nothing was spent for passengers, other than a modest campaign for the C&O's Greenbrier Hotel at White Sulphur Springs, but some money was devoted to freight and industrial development.

Some general comments can be made about other transport advertising in magazines during 1956. Much of it was competing with railroad messages in trying to im-

(*Continued on page 77*)

Along the Highways . . . 7 RRs Use Billboards

Since the largest potential source of railroad passenger traffic is on the highways, there are advertising men who believe effective ad campaigns can be built around large billboards showing the relaxing ease of travel by train. Strategically placed on hills where motorists are often delayed by slow-moving trucks, such messages might pack a surprising wallop.

A few railroads use this medium—seven did so in 1956. Unexpectedly perhaps, the airlines use more billboard advertising than the railroads. Air carriers accounted for nearly 54% of the ad dollars invested in this form of advertising last year.

Biggest railroad buyer of billboard space in 1956, according to LNA figures, was the Santa Fe. This road upped its budget from 1955 and moved into second place among transportation companies. Still leading, but by a more narrow margins, is United Airlines.

Not all roads use outdoor advertising exclusively for passenger solicitation. The Southern Pacific, for example, has developed billboard messages that boost the road's piggyback service (picture). SP's budget for billboard work in 1956 amounted to $66,360, and the carrier ranked seventh among rail, air and bus open-air advertisers.

A look at the latest LNA listing of billboard advertisers points up what are apparently unsettled opinions about this form of ad message. Total money spent for outdoor transportation advertising was down 13.1% in 1956. Four railroads that used billboards upped their outlays from 1955; two trimmed sail; two others—Frisco and Northern Pacific—which were on the list in 1955 dropped out

entirely in 1956. Industry totals for the public carriers followed this pattern:

	1956	*Share*	*1955*	*Share*
Railroads	$326,214	36.3%	$462,508	44.7%
Airlines	482,604	53.8%	483,458	46.7%
Bus lines	88,390	9.9%	88,172	8.6%

The shuffle in the ranks of billboard advertisers for the past two years, based on LNA figures, shapes up like this:

	Rank	*1956*	*Rank*	*1955*
United Airlines	1	$136,176	1	$131,845
Santa Fe	2	132,925	3	111,900
American Airlines	3	90,286	8	49,102
Pacific Greyhound	4	78,322	5	68,700
St. Louis-San Francisco	..	.....	4	70,563
Trans World Airlines	5	71,036	2	113,216
Missouri Pacific	6	66,924	6	66,924
Southern Pacific	7	66,360	9	48,915
Western Airlines	8	60,926	13	34,783
Delta-C&S Airlines	9	50,539	7	61,890
Texas & Pacific	10	41,820	11	41,648
Union Pacific	11	33,966	15	29,970
Capital Airlines	12	30,823	12	36,875
New York Central	13	27,342	10	44,102
Burlington	14	23,237	18	24,045
Continental Airlines	..	.....	14	28,296
North Central Airlines	15	22,646	16	27,451
Frontier Airlines	16	20,172	..	.....
Southeastern Greyhound	17	10,068	19	19,472
Northern Pacific	..	.....	17	24,441

Your old-fashioned scalping cuts more profits than weeds!

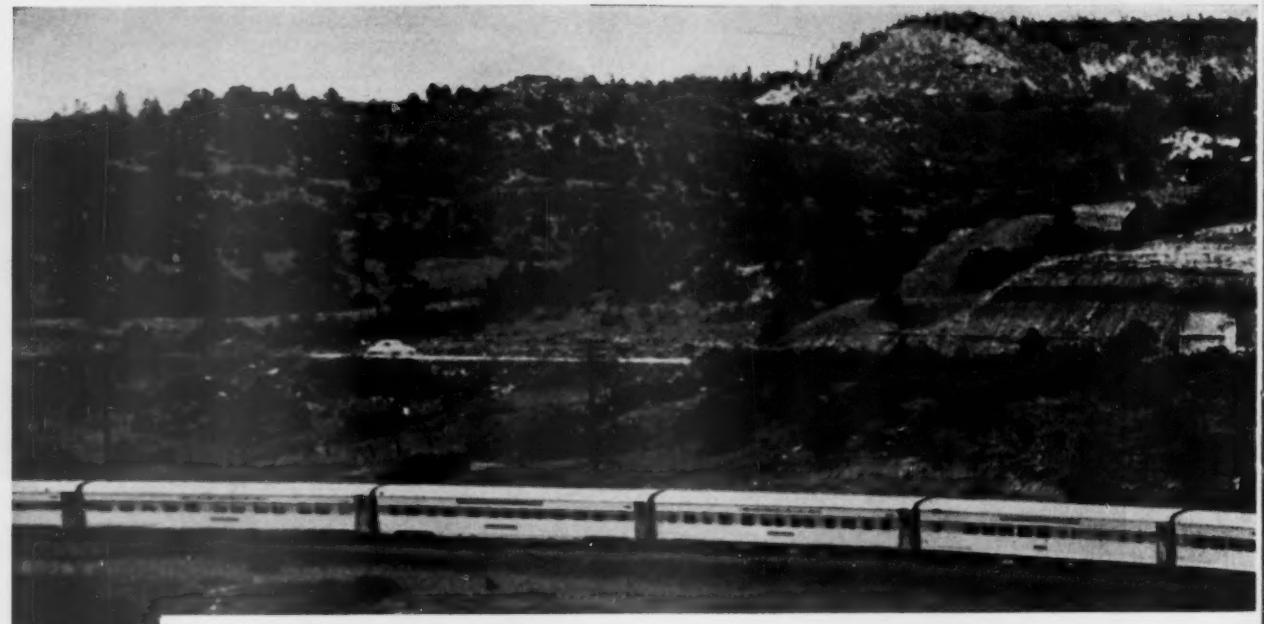
Clearing weeds by shovel-cutting, with today's high cost of labor, is downright extravagant! Borate weed killers can do a much better job of weed control for a small fraction of what hand-scalping is now costing you.

Countless dollars have been saved on weed control by 'roads using our borate weed killers since we first pioneered their development. They are effective against weeds and grasses for long periods... easy to apply... and safe to use wherever vegetation is unwanted. Today we offer a choice of several proven herbicidal formulations—each with special characteristics and advantages—to meet *your* particular requirements.

Start *your* labor-saving weed control program now. Talk to one of our technically-trained salesmen. He will be glad to recommend and demonstrate the right weed killer for you. Write today for literature or to arrange a meeting.

United States Borax & Chemical Corporation
PACIFIC COAST BORAX COMPANY DIVISION
630 SHATTO PLACE • LOS ANGELES 5, CALIFORNIA

Concentrated BORASCU® • UREABOR® • POLYBOR-CHLORATE® • MONOBOR-CHLORATE®



GASCON®...

choice of more than 100 U.S. Railroads!

The widespread popularity of Sinclair GASCON® Diesel Engine Lubricating Oils is due to their brilliant performance.

With their high degree of detergency, GASCON Oils keep all parts of a Diesel engine operating clean and free.

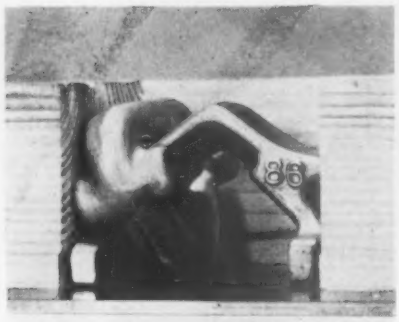
It's time you, too, investigated the advantages of this top-quality railroad lubricant. Contact your Sinclair Representative, or write us today.

SINCLAIR RAILROAD LUBRICANTS

Sinclair Refining Company, Railway Sales
600 Fifth Avenue, New York 20, N. Y.
Chicago • St. Louis • Houston

304
SANTA FE

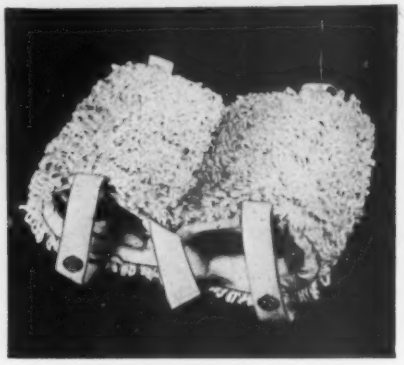
New Products Report



Retractable Flat Car Anchor

To meet demands of industry for anchors located within decking of flat cars, including a double row at the center of the car in line with side anchors, this device has a minimum size pocket in the deck and an anchor link which, when retracted, does not lie at the bottom and thus become embedded in cinders, snow or other foreign material.

The anchor fulcrum is welded to the underframe. *Maclean-Fogg Lock Nut Company, Dept. RA, 5535 North Wolcott ave., Chicago 40* •



Journal Lubricator

A journal lubricator for universal application is made of 100 per cent cotton wicking backed by neoprene bodies into which springs have been molded. It is only necessary to place the lubricator in a journal housing so the dividing line of device is parallel with axle.

According to the manufacturer, tests showed no displacement on impact, or freeze-down, with lubricator temperatures consistently lower than waste. *Cardwell Westinghouse Company, Dept. RA, 332 South Michigan ave., Chicago 4* •

Traction Gear Lubricant

Trojan R-104 is a traction motor gear lubricant said to have excellent cold-temperature viscosity characteristics and to retain proper consistency at all operating temperatures. Oxidation inhibitors are added to provide constant, even application. In bulk the material is available in 120- and 400-lb drums. It is also supplied in 1-lb poly-bags which can be dropped into the gear case where the bag disintegrates and becomes part of the lubricant. *Cities Service Petroleum Inc., Dept. RA, 54 Wall st., New York 5* •

Universal Sand Trap

The GWS-292-P trap, a new addition to the Graham-White sanding line, is designed to minimize sand trap replacements by providing standardization. It can be applied to all existing installations, with flanged or union mounting.

All accessories become an integral and permanent part of the piping system and, according to the manufacturer, it can be progressively and economically applied, without discarding usable equipment. *Prime Manufacturing Company, Dept. RA, 1660 South First st., Milwaukee 4* •

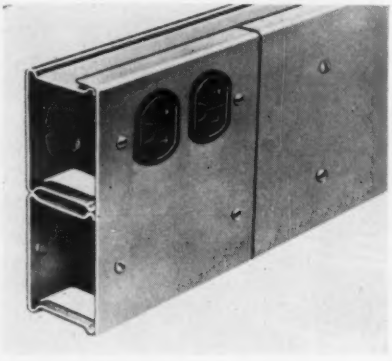
Two-Unit Photocopy Outfit

A photocopy set which will produce any length copies up to 20 inches is called the Genco Exact-Fax Duo. The outfit consists of an automatic continuous printer with shutter-type light control and an automatic continuous processor.

The system is said to operate under normal light conditions, and require no shielding or darkroom. It reportedly will produce 60 to 90 copies per hour and will reproduce from all colors. *General Photo Products Company, Dept. RA, General Photo Building, Chatham, N. J.* •

High Capacity Cord Reels

Six new models of cord reels have increased the horsepower range from a previous 1 hp to a present 7 1/2 hp. The manufacturer's line now provides a reel to supply current to electric hoists, cranes and other electrically operated mobile devices with motors having these characteristics and maximum horsepowers: 110 volts, single-phase, 60-cycle, 1/2 hp; 220 volts, 2 or 3-phase, 60-cycle 7 1/2 hp. *Shaw-Box Crane & Hoist Division, Manning, Maxwell & Moore, Inc., Dept. RA, Muskegon, Mich.* •



Wiring Raceway

This device is a new metal surface raceway designed to carry both high and low potential conductors in a single run. It is called Twinduct and provides two separate 2-in. by 2-in. raceways for wire with single screw-on cover.

Covers are available to adapt to any manufacturer's approved outlet devices up to 20-amp capacity. With devices, the system becomes an economical and efficient feeder duct. *National Electric Products Corporation, Dept. RA, Gateway Center, Pittsburgh, Pa.* •

2 new plastics tailored to increase freight car revenue

from **ADM**, Manufacturer of **Freight Liner 810**

Freight Liner 410 »» non-toxic, plastic spray coating for superior linings in covered hopper cars.

Freight Liner 700 »» abrasion resistant coating for sealing or resurfacing boxcar floors.

Major railroads in recent years have found ADM Freight Liner 810, the plastic and fiberglass boxcar relining material, to be the leading product of its type. Now ADM leadership and research offers two new additions to the Freight Liner family, each tailored to solve specific freight car problems.

Freight Liner 410 is a permanently flexible, abrasion resistant, plastic protective coating approved by the Pure Food and Drug Administration for use in shipping or storing bulk foodstuffs. Extensive in-use tests prove its superiority over more costly competitive materials for salt, flour, sugar and other edible or corrosive ladings.

Freight Liner 410 features better flexibility, absence of pinholing, better abrasion resistance, absence of troublesome catalysts, and does not require baking or extensive air drying. In addition, FREIGHT LINER 410 coatings insure better flour release, requiring less car clean-up, less likelihood of molding or eventual rusting.

Freight Liner 700 is a heavy, plastic, highly abrasion-resistant coating designed for filling cracks and rough or gouged areas in boxcar floors. Drying in 6 to 8 hours, FREIGHT LINER 700 produces a non-slip finish with excellent adhesion to wood, metal, concrete, and oxychloride surfaces but will allow nailing without chipping or cracking.

Since this new product dries by solvent evaporation, without the addition of any catalyst, it can be applied at any temperature, under all type weather conditions.

SEE BOTH THESE new PRODUCTS AT THE
ALLIED RAILWAY SUPPLY EXHIBIT
Booths 319-320, HOTEL SHERMAN

Archer-Daniels-Midland

732 INVESTORS BUILDING • MINNEAPOLIS, MINNESOTA

Only VELAC* is Fully Automatic!

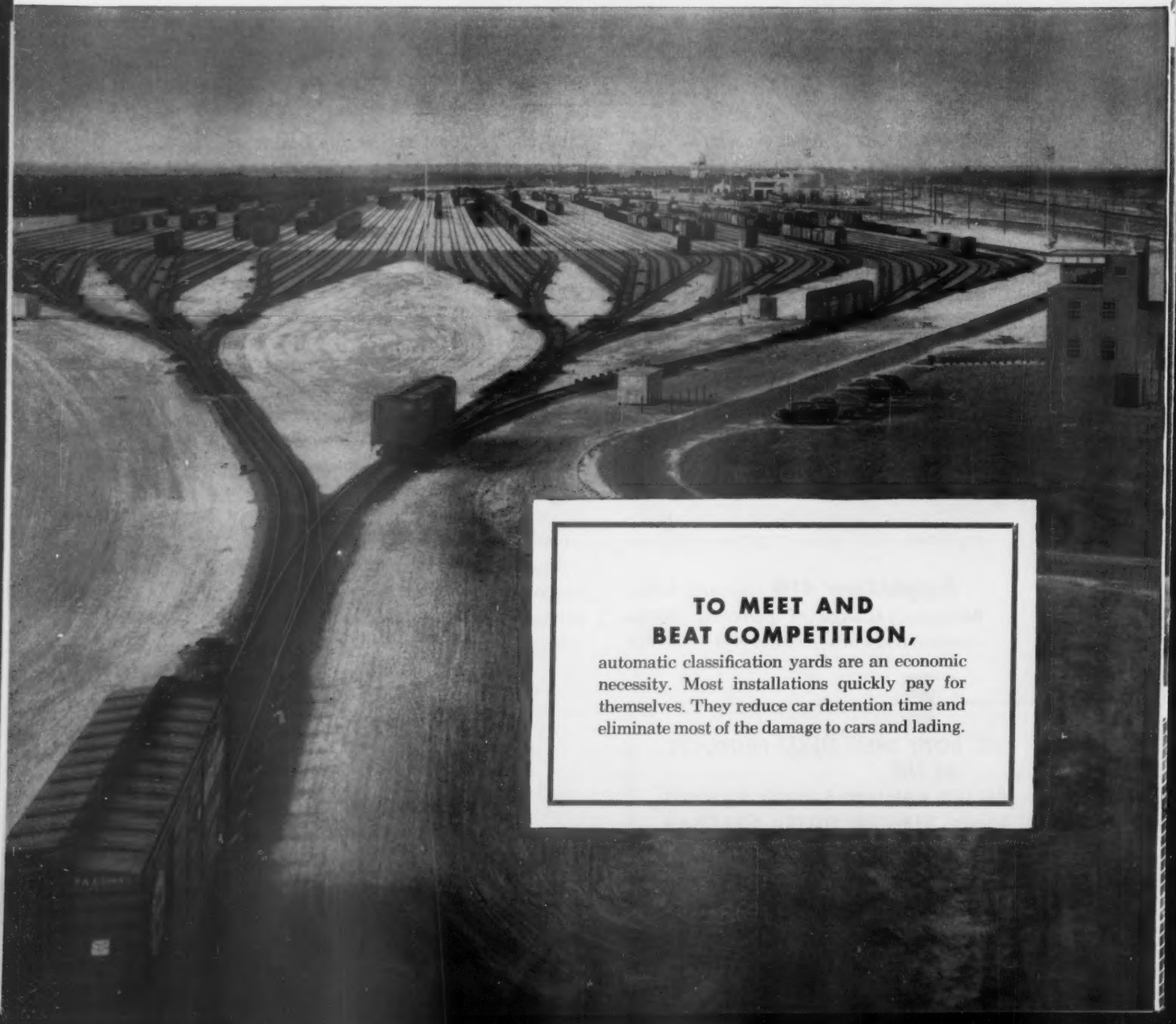
WHAT MAKES a classification yard fully automatic? We believe the following components are essential:

- Programmed switching to permit cut list to be automatically fed into automatic switching system.
- Switch machines that operate quickly.
- Retarders that provide immediate response to changes in braking requirements.
- Automatic Retarder control for precise regulation of car speeds.
- Sensing devices to measure car weight, tangent track rolling resistance, curved track rolling resistance and distance car must travel.
- Electronic computer that instantly evaluates information from sensing devices in order to release each cut of cars for a safe coupling to prevent impact damage.
- A control machine that provides basic operational information necessary for over-all yard coordination with essential finger-tip controls for use when required.

Union Switch & Signal's VELAC Automatic Classification Yard System is the only one that provides all the components necessary for a *fully automatic* yard.

Write or call our nearest office for complete information.

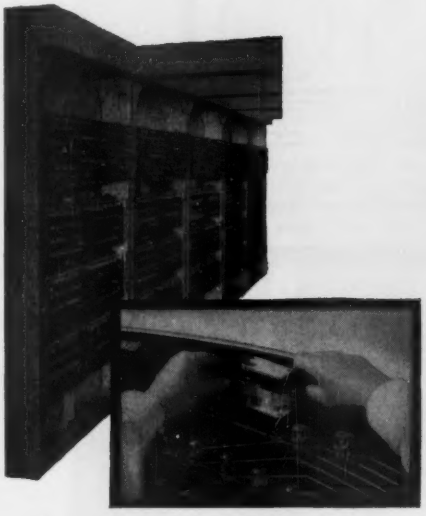
*Trademark



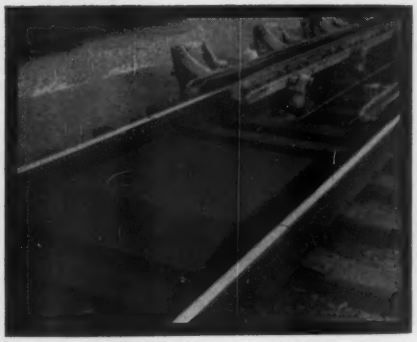
TO MEET AND BEAT COMPETITION,

automatic classification yards are an economic necessity. Most installations quickly pay for themselves. They reduce car detention time and eliminate most of the damage to cars and lading.

Classification Yard System

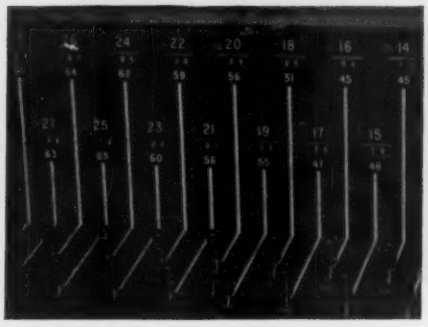


PROGRAMMED SWITCHING
This UNION development permits an operator to classify an entire train with one push of a single button. A perforated tape containing the track destination of each cut is fed into the automatic switching system which sets up the required routes automatically.

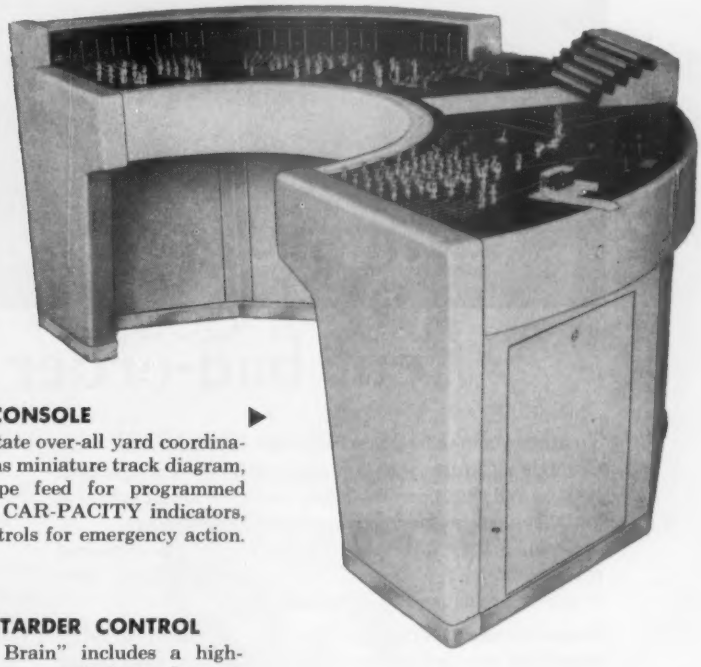


AUTOMATIC SPEED CONTROL
This provides automatic control of retarder pressure to obtain the desired velocities determined by the computer. Photo shows antenna for radar used in VELAC System to continuously measure velocity and acceleration from which rolling characteristics are determined.

WEIGHT CONTROL
Weight information is used to automatically select desired leaving speed and braking pressure of the master retarder. It is also used to preset the final retarders to obtain greater accuracy in leaving speeds.



CLASSIFICATION TRACK CAR-PACITY
Automatically determines the number of cars on each classification track and transmits this information to the electronic computer. Photo shows CAR-PACITY indicator, showing remaining track capacity as another factor in calculating final leaving speed.

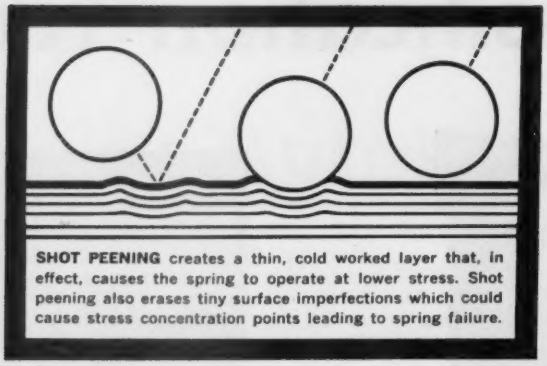


NEW U-TYPE CONSOLE
Arranged to facilitate over-all yard coordination, panel contains miniature track diagram, indicator and tape feed for programmed switching system, CAR-PACITY indicators, and finger-tip controls for emergency action.

AUTOMATIC RETARDER CONTROL
This "Electronic Brain" includes a high-speed computer of our own design and manufacture. It combines information from the sensing devices with information concerning individual track and external conditions, instantly calculates proper leaving speed, and automatically controls the retarders to assure that each car couples at just the right speed.

UNION SWITCH & SIGNAL
DIVISION OF WESTINGHOUSE AIR BRAKE COMPANY
SWISSVALE, PENNSYLVANIA
NEW YORK.....PITTSBURGH.....CHICAGO.....SAN FRANCISCO

made stronger to last longer



SHOT PEENING creates a thin, cold worked layer that, in effect, causes the spring to operate at lower stress. Shot peening also erases tiny surface imperfections which could cause stress concentration points leading to spring failure.

cut bad-order car expense

You can help keep cars off the repair tracks with Crucible's *fatigue-resistant* springs. They're single heat treated and shot peened — *made stronger to last longer* — yet they cost no more than conventional springs.

Because they last longer, Crucible *fatigue-resistant* springs reduce replacements due to spring failures—90% of which are caused by permanent set.

Fatigue-resistant springs can maintain their load-carrying capacities over longer periods because they have better hardenability, higher elastic limits and greater resistance to working stresses. Crucible ensures these qualities in every spring through strict manufacturing control from ore through final, rigorous compression tests.

Crucible single heat treated *fatigue-resistant* springs are your best guarantee of low-cost, long-lasting spring performance. For details, write for folder: *Spring Division, Crucible Steel Company of America, McCandless Avenue, Pittsburgh 1, Pa.*

CRUCIBLE spring division

Crucible Steel Company of America

These 2 letters raise a box car's revenue from $4,000 to $12,000 a year!

DF* on a box car means more revenue for the railroad . . . and more shipper-satisfaction because of the car's built-in lading protection.

Cars equipped with the DF Loader are always working. Shippers know these cars eliminate costly dunnage, reduce loading and unloading time, and permit full capacity loads.

DF cars multiply by three the revenue of ordinary box cars. DF cars build good will among shippers by virtually eliminating damage in transit. That's why 45 major railroads have DF-equipped cars among their rolling stock and why many roads are increasing their DF fleets yearly.

For full details on DF equipment . . . and what these two letters on a box car can mean to shipper and carrier . . . write Evans Products Company, Dept. E-9, Plymouth, Michigan.

DF* is a trademark of Evans Products Company . . .
only Evans makes the DF Loader.

THE KID GLOVE TREATMENT THAT LOCKS IN LADING . . . ELIMINATES DUNNAGE AND DAMAGE

EVANS PRODUCTS COMPANY **is a member of the Packaging Institute. 19th Annual Forum, October 28-30, New York City.**

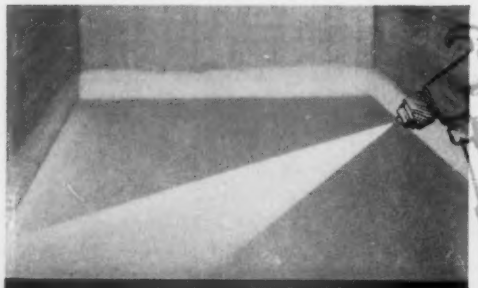
Upgrade any box car interior

QUICKLY, ECONOMICALLY

with ARMORTEX

a tough, permanent plastic car liner

BEFORE AFTER



Exclusive ARMORTEX Process Eliminates Use of Expensive Mesh or Glass Fabrics

- **SMOOTH, TOUGH SURFACE—EASILY SWEPT OR WASHED OUT**
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- **FLEXIBLE**—tough, but not brittle. 1/8" film will bend around 1" mandrel
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- **NON-HAZARDOUS**—an oil-in-water emulsion. Presents no fire hazard in storage or application.
- **INSECT RESISTANT**—made of synthetic resin and mineral fillers—absolutely impervious to insects.

Write today for free illustrated booklet giving full details on Armortex.

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509 BURCH STREET
KANKAKEE, ILLINOIS

Serving American Railroads Since 1895

Compare Costs, Materials and Application with Any Other Process

Here's really big news the whole railroad industry has been waiting for! Now, for the first time, it is possible to apply a quick, economical protective coating to box car floors and walls which insures the *permanent*, superior surface needed for shipment of high grade bulk commodities such as grits, flour, sugar and grain.

Armortex, an amazing new discovery of the J. W. Mortell Railroad Division, completely eliminates the costly preparation of cars for individual loadings. Internal car surfaces coated with Armortex no longer splinter or deteriorate under normal operating conditions...thus resulting in a reduction of claims due to leakage, infestations, package damage.

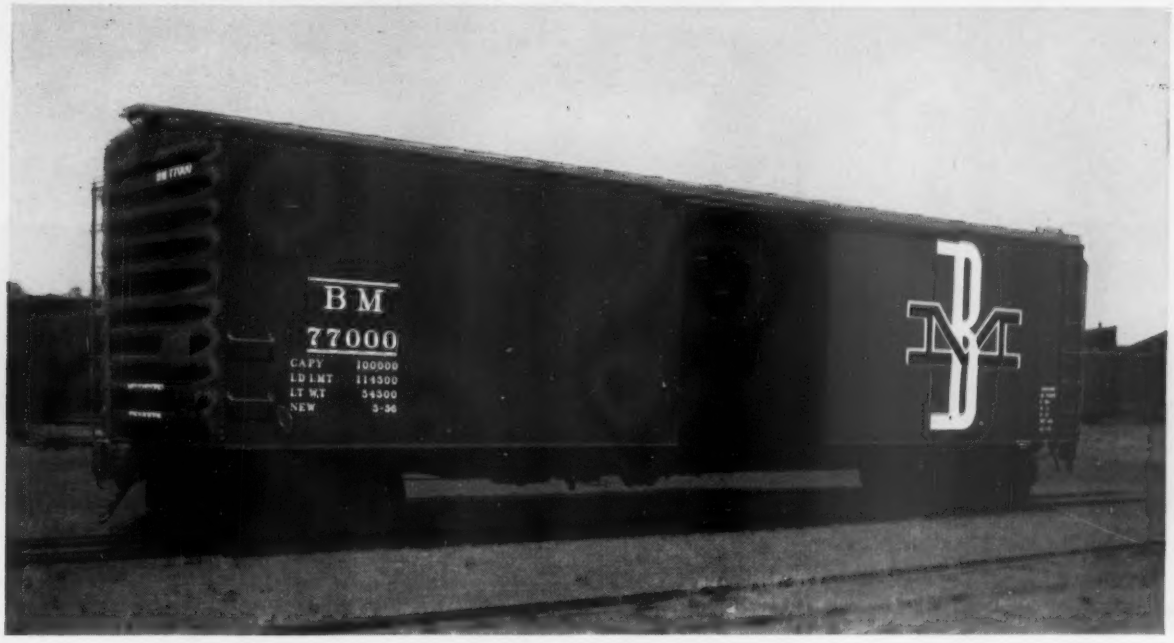
Still another big advantage of new Armortex is its ease of application. One man can cover a box car floor in less than 30 minutes...readying the car for service the next day. By spraying, brushing or troweling, Armortex can be applied at any shop, rip-track or siding without returning the car to a central maintenance location.

Armortex is also available in Caulking Grade for sealing in large cracks and gouged-out surfaces in lining, doorposts, etc.

Pittsburgh's Synthetic

CARHIDE® ENAMEL

Protects and Beautifies New B. & M. Freight Equipment



One of the fleet of new B. & M. freight cars painted with CARHIDE Enamel by the Pullman-Standard Car Mfg. Co.

THEY'RE the talk of the day in railroad circles—these strikingly different freight cars painted for the Boston & Maine Railroad by the Pullman-Standard Car Manufacturing Company. Hundreds of these colorful new cars have been recently finished with Pittsburgh's CARHIDE Synthetic Blue Enamel.

● **This unusual color** treatment makes them good for thousands of extra miles of advertising that builds prestige and good will wherever these cars travel.

● **This new CARHIDE Enamel** provides a glass-smooth, extra durable surface that retains its brilliant gloss and color. In addition to its long-lived beauty CARHIDE Enamel goes on easily and dries with surprising speed. Freight cars can be painted with attractive new colors in "around-the-clock" cycles, ready for stenciling after overnight drying.

● **Why not avail yourself** of Pittsburgh's long experience in providing a wide variety of attractive and durable finishes for many of the nation's leading railroads? We'll gladly discuss your finishing problems with you at your convenience. Pittsburgh Plate Glass Company, Industrial Finishes Division, 1 Gateway Center, Pittsburgh, Pa.

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The USS Solid Manganese Steel

Self-Guarded Frog–

improves performance...minimizes maintenance...proves economical

The USS Self-Guarded Frog incorporates raised guards which have been cast integrally with the frog body. The guards guide the wheels past the frog point, eliminating the need for separate guardrails in the track opposite the frog. Therefore, a self-guarded frog is more economical than any other comparable frog that requires separate guardrails.

Cast in one piece from tough manganese steel, USS Self-Guarded Frogs are virtually maintenance-free, requiring no periodic body bolt tightening as do bolted rigid or railbound frogs and their guardrails. When used in freight classifying yards, terminals, and industrial yards, USS Solid Manganese Steel Self-Guarded Frogs will give many years of dependable service under rugged conditions. Hook twin frog plates shown under the frogs are also a specialty of United States Steel.

For complete data, photographs, and diagrams on the full line of USS Trackwork products, send for the free catalog, "USS TRACKWORK." Address your request to United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pa. Also, you are invited to contact our engineers at any time for assistance in design.

USS **TRACKWORK**

UNITED STATES STEEL CORPORATION, PITTSBURGH • COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
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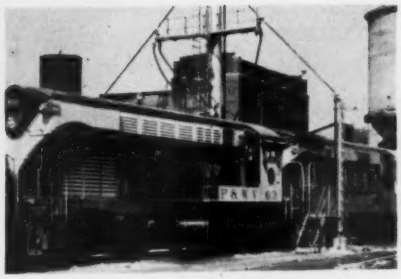
UNITED STATES STEEL

HOW ARE THEY DOING?

ON THE PITTSBURGH & WEST VIRGINIA?

Order of the Day: Optimism



In a year when the railroad business generally is plagued with spiraling costs and sagging net, the comparatively little Pittsburgh & West Virginia (111.2 miles of main line) is viewing the future with undisguised optimism. It has reason to.

- Per share earnings for 1957 will probably approximate $4, may rise to around $4.25.
- The road's "pattern" of taking better than 10% down from gross to net will almost certainly be continued—11.2% was carried through to net during the first six months of the year.

The question, then, is not "how are they doing?" but rather "how are they doing it?"

The answer, P&WV President Richard N. Shields declares, lies in two main factors:

- Considerable industry has been added in P&WV territory.
- "We've become a great deal more efficient in operations."

For the future, P&WV has bright prospects in at least three fields—all of them tied to developments now under way:

1. Coal traffic is up 12.7% for the first six months of 1957, over the like period last year. And along the road's lines lies 600 million tons of recoverable coal in the Pittsburgh seam, plus added tonnage in the deeper Freeport seam.

2. P&WV has plans for a river-rail terminal on the Ohio river near Wellsburg, W. Va. The initial operation would be primarily a down-river movement of coal—but a large area nearby is available for what could be a mammoth industrial district, served by both rail and water transportation.

3. Industrial development is progressing steadily. An example: Vanadium Corporation is expected to start operations in September at a new plant in Ohio which may give the P&WV 5,000 carloads a year. Other prospects include industrial areas developing near Monessen, Pa., and at the road's Rook, Pa., yard.

Future prospects, however, don't account for the road's outstanding showing so far this year. That's covered by such things as a 25.31 transportation ratio coupled with a 72.52 operating ratio, mechanization of maintenance-of-way operations, constant experimentation to devise better methods and cut costs in maintenance of equipment (particularly locomotives), a system of daily checks on P&WV performance and, in short, a willingness to try just about anything that promises (1) increased business, or (2) more efficient operation.

A good example of the road's "let's try it" philosophy might be its growing use of specialized equipment. At present, P&WV has 40 gondolas equipped with permanent blocking and removable hoods for sheet and coil steel movements. According to President Shields, the cars are "in great demand"—and it seems likely that the P&WV will give a close look at all future opportunities to gain new business by offering specialized service.

"We believe," President Shields told a Railway Age editor, "that we're going to have to come more and more to specialized equipment . . . to increase our business and be competitive with trucks. Specialized equipment gets us farther in competing with trucks than freight rate reductions do. We're very happy with our coil cars."

Traffic Up, Costs Down

While the P&WV is probing all avenues of approach to bring more traffic—both overhead and originating—to its lines, it is at the same time exploring all possibilities in reducing operating and maintenance costs.

Cases in point: Maintenance-of-way operations are being steadily mechanized. "We're working toward larger, more mobile gangs with more off-track equipment," President Shields comments. Another forward move in M/W involves installation of new rail ("We're going to lay more rail this year than any since I've been here," Mr. Shields points out.) The P&WV began tests of welded rail in 1956; installations this year will total 2.25 track miles, including rail in three tunnels. The road also plans to lay a 2,378-ft test installation of tight rail, again following up an experimental program begun last year.

Maintenance of equipment is also undergoing constant updating, in line with results of experimentation at Rook. The road still uses 200,000 miles as a basis for locomotive overhauls—but in at least two cases the "basis" has been well stretched. Engine No. 61 has logged 259,949 miles since its last major overhaul; No. 63 has gone 251,539 miles since shopping. In both cases, the P&WV used a home-made tool and home-grown know-how to postpone heavy repairs. What did it? Use of a stone reamer rigged up to grind out a "shoulder" in the cylinder liner of the diesel engines and thus prevent breakage of rings. Both locomotives 61 and 63 had the grinder treatment at 150,000 miles; both have rolled up more than 100,000 miles since then; and both are showing no signs of needing overhaul.

Smallness No Handicap

General Superintendent Kresge will agree with the viewpoint that new business and increased efficiency are the bases for P&WV's improved showing. And he credits the efficiency to two main features: Fairly even distribution of business between east and west movements; and the fact that P&WV is small enough to enable management to keep constant tabs on traffic, maintenance and performance.

The combination has led to the bright statistical picture presented by the road at mid-year. Even increased labor costs have not prevented P&WV from improving its M/E and transportation ratios and cutting its operating ratio from 73.28 to 72.53 (despite a slight jump in the M/W ratio).

In only one month this year (May, 9.8%) has the company failed to bring at least 10% of its gross down to net; if, as seems likely, the year's end brings what President Shields thinks it will bring, the road will wind up with the best net-to-gross ratio and the top per-share earnings since 1950.

Optimism, it seems, is still fashionable (accurate, too) on the P&WV.

YOU SAVE WHEN YOU USE "Safety" EQUIPMENT for...

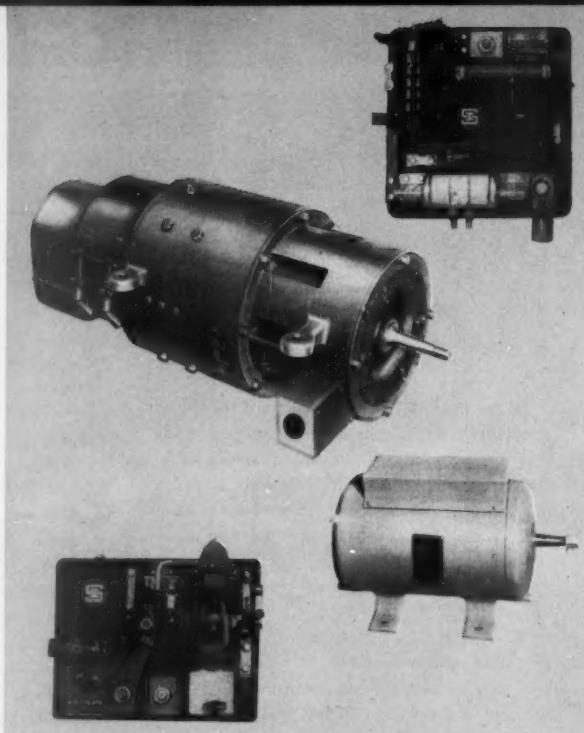
GENERATING and CONTROL EQUIPMENT...

"SAFETY" GENEMOTORS... available in capacities of 25, 30 and 35 KW and in 40, 80 and 140 volts nominal ratings with 20 or 32 HP AC, 60 cycle 220 volt motors . . . 12 to 20KW output on standby.

"SAFETY" GENERATORS... available in capacities from 1KW to 25KW and in ratings of 40, 80 and 140 volts. The 1KW to 10KW machines are supplied complete with suspensions for flat or V-Belt applications. Generators of 5KW to 25KW capacities are supplied for positive mechanical drives.

"SAFETY" CABOOSE GENERATOR POWER SYSTEMS... for the most dependable caboose communication and electrical requirements . . . are available in capacities from 1.5KW to 5KW for 14 and 40 volts, arranged for end of axle or belt drive.

"SAFETY" REGULATION EQUIPMENT... generator and load regulators, and reverse current relays . . . simple in design, require little maintenance and assure automatic, constant protection.

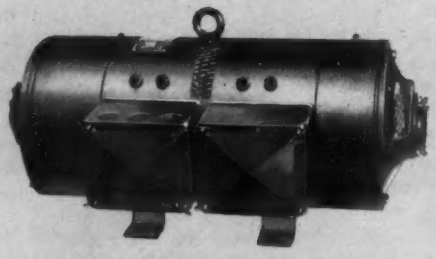


"SAFETY" CONVERSION EQUIPMENT...

"SAFETY" MOTOR ALTERNATORS... for DC to AC power conversion required for fluorescent lighting. Available in capacities of 1.2KW to 7KW.

"SAFETY" MOTOR GENERATORS and MOTOR ALTERNATORS... for DC to DC or DC to AC power conversion for radio equipped diesel locomotives or communication applications . . . available in capacities of 200 watts to 1500 watts.

"SAFETY" DYNAMOTORS... for electrical braking and similar applications. Used for electrically separating primary power from secondary operating circuits. Available in 700 watt capacity.



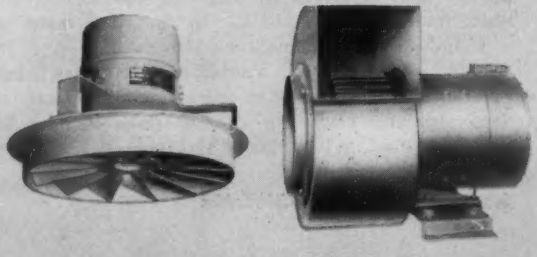
"SAFETY" FANS AND BLOWERS...

"SAFETY" EXHAUST FANS... for ventilating kitchens, lavatories and smoking compartments.

"SAFETY" CEILING FANS... for non-air conditioned cars.

"SAFETY" MODEL 51 FANS... adjustable swivel base for wall mounting . . . especially useful in non-air conditioned cars.

"SAFETY" BLOWER UNITS... full line of blowers for ventilating and exhaust purposes.



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Cars completely "Safety" equipped assure the railroad of "Safety's" **undivided responsibility** for the proper performance of all electrical and air conditioning equipment. This single responsibility reduces operating woes . . . simplifies maintenance . . . safeguards your valuable equipment.

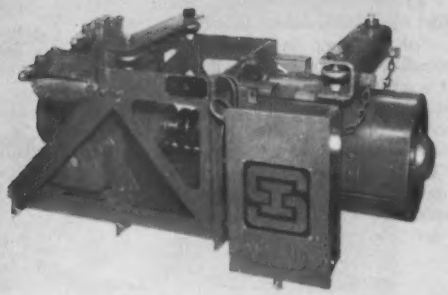
"SAFETY" AIR CONDITIONING EQUIPMENT...

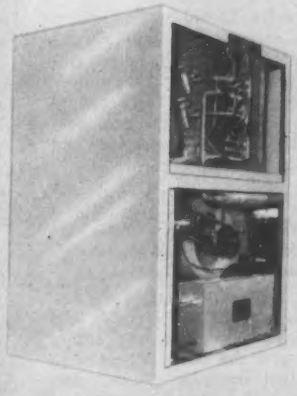
A complete Air Conditioning System by "Safety" . . . including a Direct Driven Compressor, Evaporative or Air Cooled Condenser, Overhead Evaporator Unit (all equipped with "Safety" motors) and a Motor Control Panel . . . assures the railroad of "Safety's" **undivided responsibility** for the proper performance of the entire air conditioning system.

The "Safety" Air Conditioning equipment line also includes ceiling and package-type air conditioners designed for special types of cars and requirements . . .

"SAFETY" PACKAGE AIR CONDITIONERS... 6 and 7 ton capacities, for alternating current operation, are designed for location in space above the wheel well in lightweight cars . . . or for direct current operation as a floor mounted 8 ton unit adaptable to car remodeling programs where existing car conditions would make other types of air conditioners too costly.

"SAFETY" AIR DISTRIBUTORS... provide one of the most satisfactory methods of uniform air distribution within a passenger car . . . arranged for continuous closed ducts or for drop type panels.





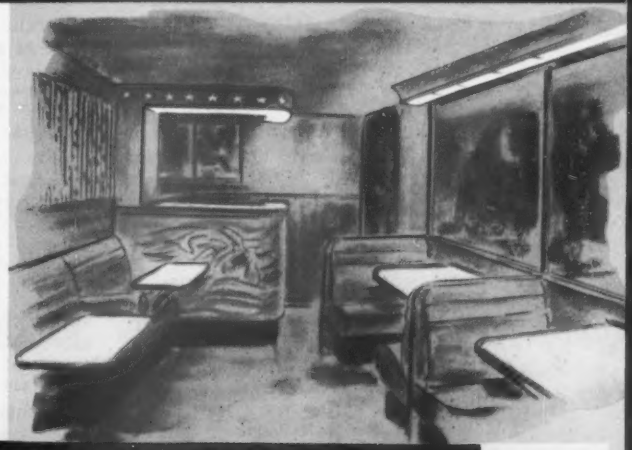
CARS LAID UP = PROFITS LOST...

Keep 'em rolling with "Safety"

LIGHTING...by "SAFETY"...

A complete line of modern fixtures, fluorescent and incandescent, with glass or plastic shades . . . available for standard railway passenger cars, lightweight cars, postal and baggage cars and cabin car applications.

"SAFETY" LUGGAGE RACKS... designed with and without lighting units.



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Current Publications

BOOKS

HANDBOOK OF POWERED INDUSTRIAL TRUCKS. 94 pages. Industrial Truck Association, Ninth and F sts., Washington 4, D.C. $5.

This handbook, first such manual to cover all types of powered industrial trucks, is the result of more than two years combined effort by various association committees. It is divided into five sections covering selection, procedures and operation. Of particular interest is a 20-page section devoted to engineering data, said to be the most complete compendium of technical information on industrial trucks ever published.

The association says plans call for distribution of the manual the latter part of September or early October and advance orders may be placed now.

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WOOD FOR MARINE USE AND ITS PROTECTION FROM MARINE ORGANISMS. 52 pages, illustrations, maps, charts. Available from American Society for Testing Metals, 1916 Race street, Philadelphia 3, Pa. $2.

ASTM Special Technical Publication No. 200 covers several aspects of the problem of conserving wood for marine use.

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INDUSTRIAL WATER AND INDUSTRIAL WASTE WATER. 52 pages. Available from the American Society for Testing Metals, 1916 Race street, Philadelphia 3, Pa. $2.

This ASTM Special Technical Publication No. 207 presents several papers in a symposium from the Second Pacific Area National Meeting, Los Angeles, held under auspices of ASTM Committee D-19 on Industrial Water. Aspects of the problem covered include source, processing, use and disposal of industrial water.

•

THE DIESEL LOCOMOTIVE, by R. L. Aston. 116 pages, illustrations, drawings. Thames & Hudson, Ltd., 30 Bloomsbury st., London, W.C.1. 12s6d.

Beginning with a brief account of the historical development of the diesel engine and its application to rail traction, the author proceeds to deal with the basic principles of the engine: the fuel injection system; electrical, mechanical, and hydraulic systems of transmission; and auxiliary equipment. Special attention is given to planned maintenance and operating troubles. The book is especially designed to appeal to operating and shop personnel.

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PAMPHLETS

CHARTING STEEL'S PROGRESS. 1957 edition. 72 pages, illustrations, charts. American Iron and Steel Institute, 150 E. 42nd. st., New York 17. Single copies available free if requested on company, association or institute letterhead. Additional copies, 50 cents each.

Presenting significant iron and steel industry statistics in graphic form, this booklet is classified into six sections: steelmaking raw materials, their sources and use; steelmaking capacity, its location and growth; expanding steel production; distribution of steel products; wages, hours and working conditions in the steel industry; and, the steel industry's financial affairs.

VISUAL PRINCIPLES FOR TRAINING BY TELEVISION. 28 pages. PB121931, R. Jackson, Office of Naval Research. Available from the Office of Technical Services, U. S. Department of Commerce, Washington 25, D.C. 75¢

This report, now released for industry use, presents results of a Navy research study to determine more effective procedures for training by television. The principles were drawn from tests of more than 100 training devices.

•

THE RAILWAY MAIL STORY. 19 pages, illustrations. Association of American Railroads, Transportation Bldg., Washington 6, D.C. Free.

In addition to telling the story of how efficiently the railroads handle mail, this booklet contains a chronology of railway mail history dating from November, 1831, through 1956, and some material related to erroneous statements about railroad mail service made recently in the report of the Citizens' Advisory Council on the Post Office.

•

BETTER TRANSPORTATION—PATHWAY TO PROFITS. 24 pages, illustrations. Dun's Review and Modern Industry, 99 Church st., New York 8. 25 cents each, 5 for one dollar.

This is a reprint of the Extra Emphasis Feature from the June issue of Dun's Review and Modern Industry. It is an 8-part report on industrial transportation and how it is being improved. Articles include: how companies spend $50 billion to move goods; transportation costs can be cut; where does does the traffic department fit?; how to select the right carrier; transportation is moving fast; how will goods be moved in 1965?; and do you make these costly errors (points up pitfalls in traffic operations).

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BRITISH RAILWAYS 1957 MAP AND TRAVEL FOLDERS. British Railway Offices in New York, Chicago, Los Angeles, Toronto.

The comprehensive folder is a pictorial report of places and events in Britain and Ireland likely to be of interest to visitors. The majority of pictures are in full color and are accompanied by brief descriptions of what they are and how to get there. The map folder, sporting a new and modern-looking cover, describes services offered by British Railways and opens into a large detailed map of Britain's railway system.

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FOOD TRANSPORTATION AND WHAT IT COSTS US. 23 pages, illustrations, charts. Marketing Research Division, Agricultural Marketing Service, U.S. Department of Agriculture, Misc. Pub. No. 738. For sale by Government Printing Office, Washington 25, D.C. 15¢.

Outlines the forms of transport used for haulage, services offered, length of haul, transportation by truck, transportation costs to the consumer, share charged for supplemental services, and recent trends in transportation charges.

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YOUR OPPORTUNITIES IN INDUSTRY AS A TECHNICIAN. 31 pages, illustrations. Education Department, National Association of Manufacturers, 2 E. 48th st., New York 17. Free.

Contains detailed descriptions of the work and qualifications needed to be a technical specialist in nine specific categories: electric power, diesel, instrumentation, air conditioning, chemical, tool design, aviation, industrial, electronics. Keyed specially for junior and senior high school students and for use by guidance counselors and libraries, the pocket-sized booklet spells out common-sense steps in preparing for a career as a technician and lists success factors and "Projects to Prepare You for the Job."

•

DIRECTORY OF COAL MINES & COKE OVENS LOCATED ON THE BALTIMORE & OHIO RAILROAD AND LATERAL LINES, 1957. 104 pages, illustrations, maps. Baltimore & Ohio Railroad Company, Traffic Department, Baltimore 1. Free.

Contains alphabetical and geographical lists of the coal mines, with maps indicating where the mines are located; description of principal coal seams; and alphabetical lists of coke ovens, by-products coke oven plants, coal and coke operators, and coal sales agents.

•

A STUDY OF THE GULF, MOBILE AND OHIO RAILROAD COMPANY. 36 pages. Hayden, Stone & Co., 25 Broad st., New York.

A financial study of the GM&O containing numerous statistics and a traffic density chart.

•

PACKAGING AND MATERIALS HANDLING, 1941-57. Catalog No. CTR-72. Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C. 10 cents.

This catalog lists 118 technical reports in the field of packaging and materials handling in the collection of the Office of Technical Services. Some reports are the results of government laboratory research or research in other facilities conducted under contract to government agencies. Others are captured German documents from World War II. All reports are available either from the OTS in printed form or from the Library of Congress in microfilm or photocopy only.

•

FROM THE MANUFACTURERS

BULLETIN P-5571. 4 pages. Illustrations. Kelite Corporation, 81 Industrial road, Berkeley Heights, N. J. Free.

Describes the new Mark series of three direct-fired Kelite Steam Cleaners, with illustrations and a table of specifications for each machine, plus lists of specifications and optional features for the three steam cleaners.

•

FOR ECONOMICAL MAINTENANCE OF WAY AND STRUCTURES. 8 pages, illustrations, color. Available as Form No. 32610, Advertising Division, Caterpillar Tractor Company, Peoria, Ill.

Pamphlet discusses and illustrates uses of Caterpillar machines on six American railroads.

•

THE BIG DIFFERENCE. Sound, color. 16 mm, 16-minute length. Available for showing from Superior Steel & Malleable Castings Company, Benton Harbor, Mich.

This film traces development of a Superior engineered casting, starting with the problem (functional strength of an arm lift weldment on a piece of earth-moving equipment) and moving through tests of the weldment, design and manufacture of a steel casting to replace it, and finally testing of the casting. Test methods include both laboratory and field studies.

(Continued on page 78)

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Precast concrete stations such as this one at New Florence, Mo. will replace old wooden stations on the Wabash Railroad. Precast concrete panels were selected because they met all requirements at low cost, have a pleasing appearance, are quick and easy to erect and promise low annual maintenance cost.

Precast concrete railroad stations are just one of more than 160 uses for portland cement and concrete which enable American railroads to improve service and save time and money. The moderate first cost of such improvements—plus their long life and low maintenance cost—result in true ***low annual cost.*** This saves money for other necessary budget items.

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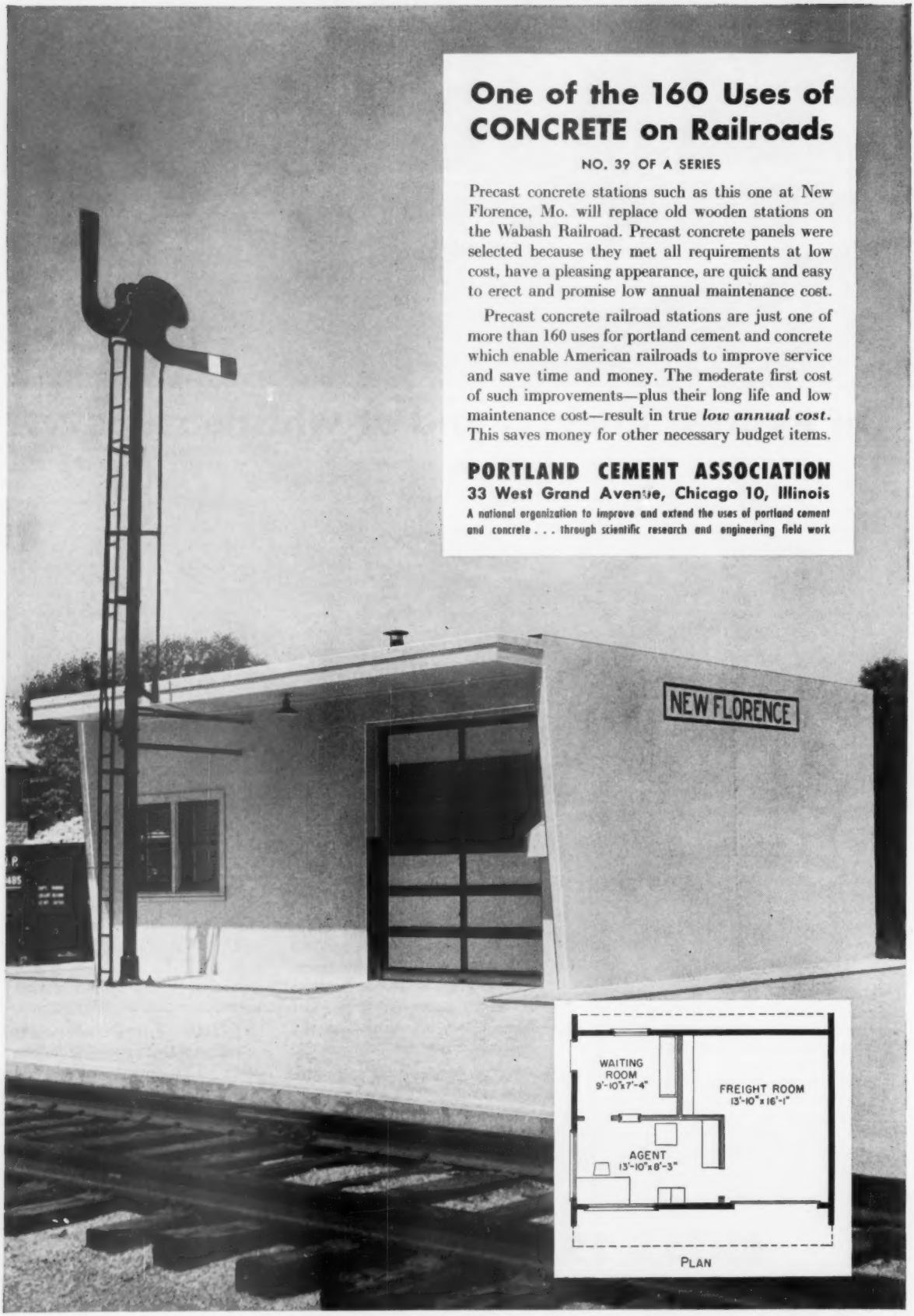

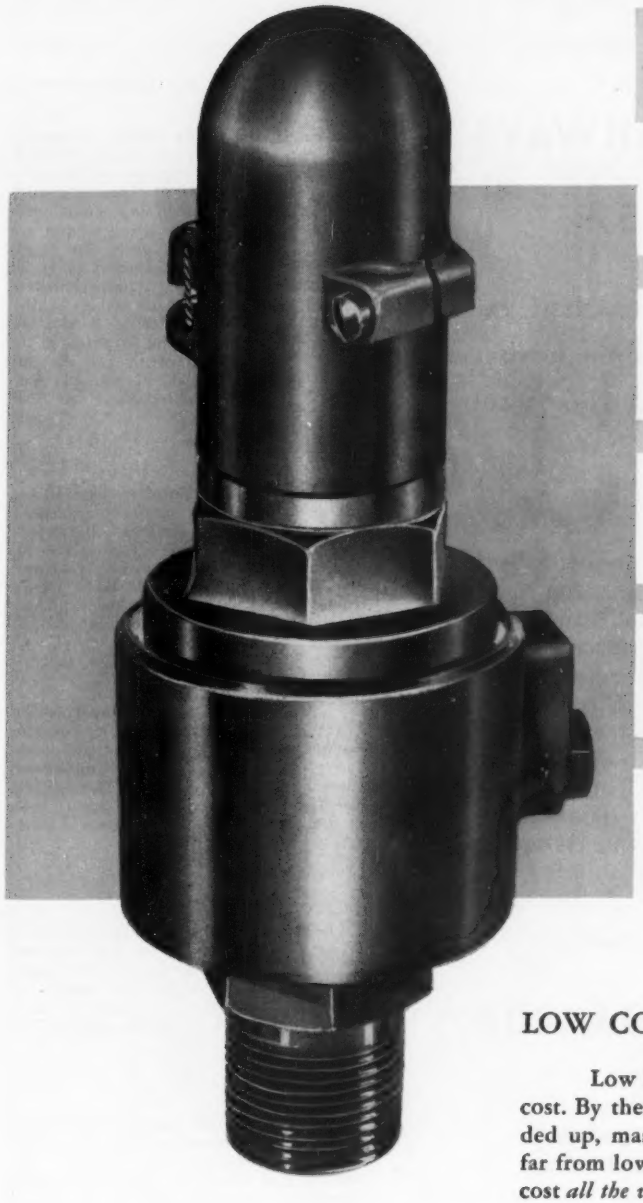

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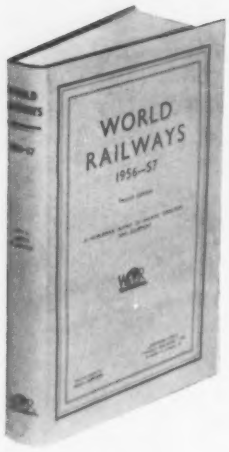

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A world-wide survey of railway operation and equipment covering 1,470 railways in 106 countries.

[1] There are 157 major rail systems treated individually in this important reference volume, with up to date maps, and equipment, financial and traffic statistics, plus new tabular listings under 32 different information headings which provide exhaustive data on more than 1000 railways. In addition, recent changes and improvements are reviewed, including those in the welded rail and electrification fields. The book includes a section on the activities of most of the world's locomotive and car builders as well as a survey of new equipment produced in the past two years. There are also brief summaries of special developments in radio, lightweight equipment, rail fastenings and mechanized equipment. A separate section is devoted to diesel locomotive power available for rail transport.

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by Robert G. Lewis

The complete illustrated data guide to every Class I railroad in the United States.

[2] This handy reference volume condenses and analyzes a vast amount of information on America's Class 1 line-haul rail carriers. Its broad scope is indicated by its coverage of financial and operating data, equipment statistics, historical sketch, biographical data on the chief official of each road, route map, herald, etc. Convenient for desk use.

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Other Books of Interest—

[3] **Super-Railroads for a Dynamic American Economy**—by John Walker Barriger. The basic elements of the railroad problem—physical, financial, and managerial—in modernizing plant and service are subjected to penetrating analysis in this brief study. In reappraising the railroad industry as it is today and outlining a comprehensive plan for modernization of service while at the same time lowering costs, the author concludes that the brightest challenge and greatest growth for the industry still lie ahead. 91 pp. (17 pp. tables), paper bound—$2.00.

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[4] **Iron Road to Empire**—by William Edward Hayes. The fascinating history of the Rock Island Railroad, based entirely upon research and factual record, carefully collated and woven together in a complete story of the Rock Island lines. Packed with local color. Railroad Americana at its best. 320 pp. $5.00.

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[5] **Mileposts On the Prairies**—by Frank P. Donovan. A history of the Minneapolis and St. Louis Railway Company—one of the most interesting among Class 1 rail carriers and the "Little" big railroad that played such a major role in the development of the great American midwest. 310 pp. $4.50.

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[6] **Trains, Track and Travel**—by T. W. and R. G. Van Metre. The railroad story from its beginning to the latest developments of today. A wealth of authentic detail on all phases of railroading. Now in its ninth edition, 501 pp. $4.95.

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[8] **A Picture History of Baltimore & Ohio Motive Power**—by Lawrence W. Sagle. Pictorial account of B & O's 125 years of locomotive development from the little "Tom Thumb" of 1830 to today's gargantuan diesels. 192 pp. $3.75.

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[9] **Rights of Trains**—by the late H. W. Forman and Peter Josserand. An essential reference for railroad operating personnel. Analyzes the standard code of operating rules of the A.A.R. as applied to single and double track. (4th ed.) 397 pp. $4.95.

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[10] **Who's Who In Railroading**—biographical sketches of more than 6,000 officials and others in the industry. 1954 (13th ed.) 800 pp. $7.00.

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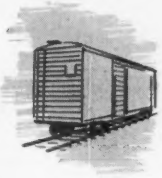
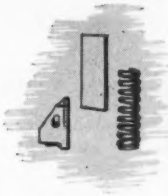
Barber Stabilized Trucks save maintenance costs. When it's necessary to service *Barber* parts, the friction castings and side springs are removed and replaced *5 to 10 times faster* than those of any competitive truck.



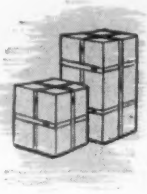
FACT No. 2

Barber Stabilized Trucks protect your equipment. Their unique system of suspension absorbs and eases . . . by friction . . . the destructive vertical shocks and bouncing as well as the lateral forces which usually result in dangerous nosing and swivelling.



FACT No. 3

Simplicity and durability in action! Barber's three sturdy parts . . . the special *friction shoe*, the *wear plate* and the *side spring* . . . can be inspected at a quick glance. Fewest possible working parts require less attention, do a better job.



FACT No. 4

Barber Stabilized Trucks save on damage claims. They provide *the* smoother ride for ladings. Simply stated, Barber Stabilized Trucks provide variable friction for variable loads. No over-solid spring blows! For smoother-riding freight cars, insist on Barber.

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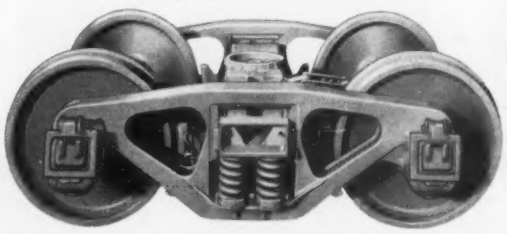

BARBER

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Standard Car Truck Company
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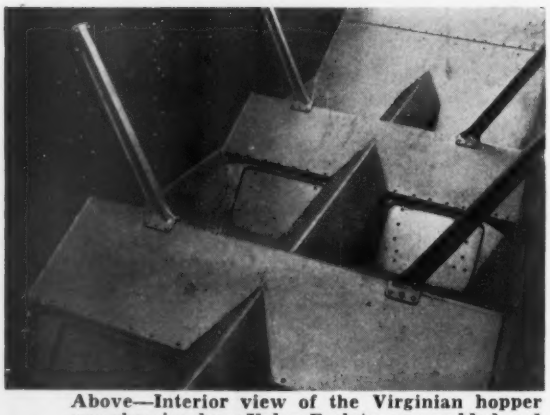
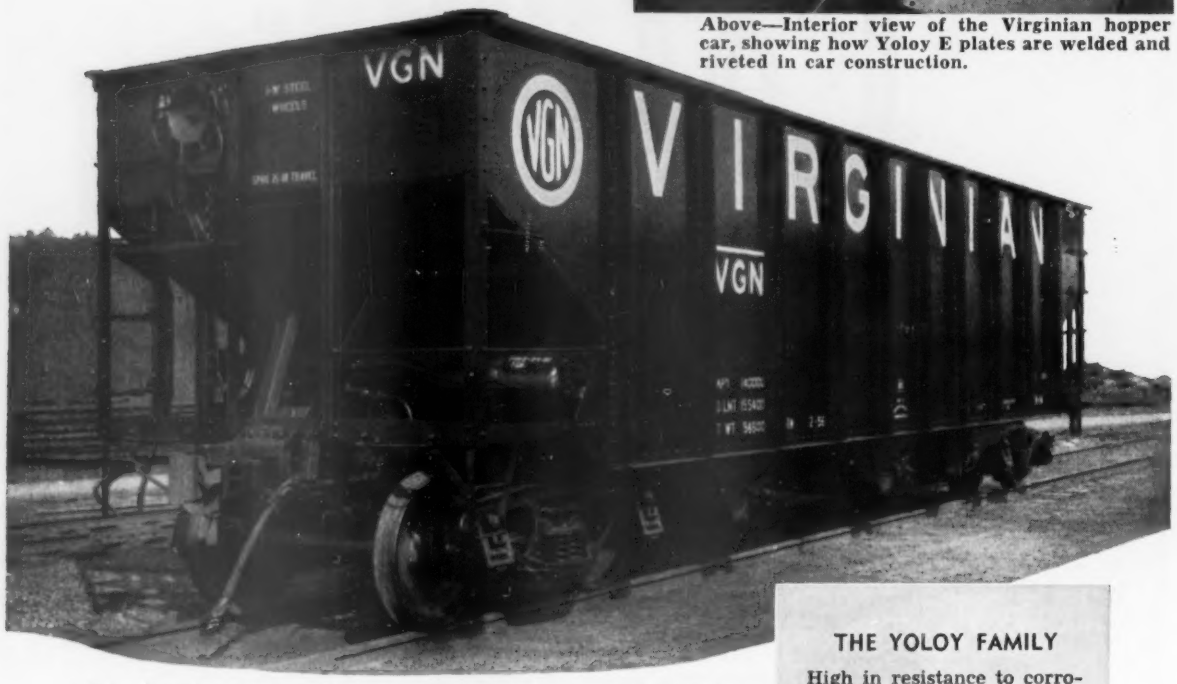
On the Virginian coal rides on YOLOY E



Above—Interior view of the Virginian hopper car, showing how Yoloy E plates are welded and riveted in car construction.



Five hundred 70-ton hopper cars like this one, to be built in the Virginian shops this year, will use Yoloy E plates. These rugged cars will soon join fleets of thousands of others built of high strength steels, to haul the nation's coal from mines to market.

Yoloy E has high resistance to corrosion, abrasion and shock which results in lower maintenance and greatly lengthened life for hopper cars, box cars and other rolling stock.

The excellent forming and welding qualities of Yoloy E meet all requirements for railroad construction. More than 20 years of proven service on American railroads demonstrate every day the extra values obtained from the Yoloy Family of Steels.

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High in resistance to corrosion, shock and vibration, easy to fabricate, easy to weld.

YOLOY S
(Nickel-Copper)
High Strength Steel

YOLOY E
(Nickel-Chrome-Copper)
High Strength Low Alloy Steel

Youngstown

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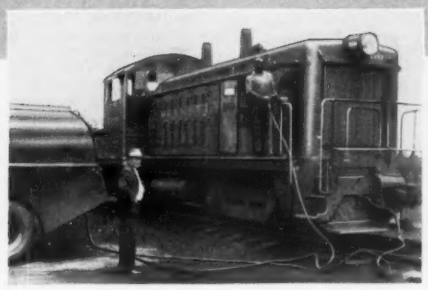
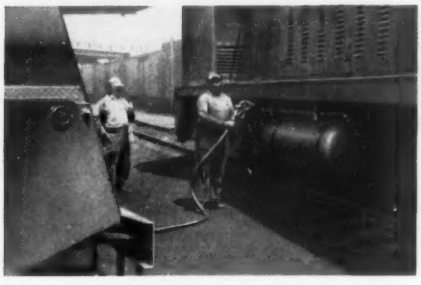


Photos illustrate ease of refueling, re-sanding and rewatering with Diesel Catering Unit



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People in the News

ARKANSAS & LOUISIANA MISSOURI.—D. G. Dowell and **R. C. Blackstar** appointed general agents at Shreveport, La., and Houston, Tex., respectively.

ATLANTA & WEST POINT-WESTERN OF ALABAMA-GEORGIA.—A. S. Kennickell, Jr., general agent, Winston-Salem, N. C., retired September 1.

BOSTON & MAINE.—Stanley G. Phillips, chief engineer, Boston, elected vice-president—engineering.

Ralph W. Pickard, director of labor relations, **New Haven** at New Haven, appointed vice-president—personnel, B&M, Boston.

BURLINGTON.—L. E. Quirin, district master mechanic of the locomotive and car departments, Chicago, appointed shop superintendent, Aurora, Ill., to succeed the late **C. C. Cornells** (Railway Age, Aug. 26, p. 56).

CANADIAN NATIONAL.—B. Chappell, assistant chief engineer, Western region, Winnipeg, named chief engineer there, succeeding **J. L. Charles,** appointed consulting engineer, Winnipeg. **E. S. English,** district engineer, Montreal, named assistant chief engineer, Western region.

R. O. Rollo appointed transport economist, Toronto.

C. J. Dunn named western regional supervisor of terminal operations, Winnipeg.

CANADIAN PACIFIC.—J. N. Fraine, general manager, Eastern region, Toronto, appointed vice-president, Pacific region, Vancouver, B.C., succeeding **W. Manson,** retired (Railway Age, Sept. 2, p. 41). **J. R. Strother,** assistant general manager, Eastern region, succeeds Mr. Fraine. **W. J. Presley,** assistant superintendent, Montreal terminals, appointed superintendent, Laurentian division, Montreal, succeeding **F. L. Moorey,** transferred. **G. Benoit,** assistant superintendent, **Quebec Central,** Sherbrooke, Que., succeeds Mr. Presley.

A. E. Jenner, assistant superintendent, Schreiber, Ont., appointed superintendent, Piggyback Services, Montreal.

A. K. Rowntree, division engineer, London, Ont., transferred to Montreal terminals, succeeding **R. S. Allison** (Railway Age, Sept. 2, p. 41).

J. C. Eldridge appointed right of way and lease agent, Prairie Region, Winnipeg, succeeding **Wilfred Humphreys,** who retired August 31.

CHESAPEAKE & OHIO.—J. L. Quarles, superintendent of stores, Cleveland, retired August 31.

CHICAGO, AURORA & ELGIN.—John F. Quinn, freight traffic manager, elected vice-president—freight traffic, Wheaton, Ill.

DELAWARE & HUDSON.—Abram C. Allen, master mechanic, Pennsylvania-Susquehanna division, Oneonta, N.Y., appointed master mechanic for the entire system at Colonie, N.Y. **August N. Gambichler** named assistant master mechanic, Saratoga-Champlain division, Colonie. **Claude E. Gregory,** general car foreman, Oneonta, appointed assistant master mechanic, Pennsylvania-Susquehanna division, Oneonta. **Thomas J. Bradley,** assistant general diesel supervisor, named diesel supervisor, Colonie.

J. N. Fraine
CPR

J. R. Strother
CPR

FRISCO.—C. B. Anderson, assistant superintendent dining car service, Springfield, Mo., advanced to superintendent dining car service there, succeeding **O. T. Hall,** who retired August 31.

GULF, MOBILE & OHIO—V. M. Perry appointed general freight agent, Chicago. **M. E. Compton** named district freight agent, Washington, D.C.

MAINE CENTRAL.—John Michaels, assistant auditor disbursements, appointed auditor disbursements; **Walter J. Provencher,** traveling accountant joint facilities, succeeds Mr. Michaels, Portland, Me.

MISSISSIPPI CENTRAL.—LeRoy Morris, Jr., assistant general agent, Atlanta, Ga., appointed general agent, New York (P. O. Address, 83 Borden street, Shrewsbury, N.J.).

MISSOURI PACIFIC.—S. C. Killingsworth appointed car accountant, St. Louis, succeeding **E. G. Trobaugh,** who retired August 31.

J. E. Martin appointed assistant division engineer, Kansas City, Mo., succeeding **D. J. Bertel,** promoted to division engineer, DeQuincy, La., to replace **C.S. Colvin,** retired.

L. W. Martin named terminal master mechanic, Settegast Terminal, Houston.

NEW HAVEN.—John J. Gaherin, manager of personnel of the **Long Island,** Jamaica, N.Y., appointed director of labor relations, New Haven, at New Haven, succeeding **Ralph W. Pickard,** who has been appointed vice-president—personnel, **Boston & Maine,** Boston.

W. K. King, manager personnel, New Haven, appointed general superintendent of car and station services.

NEW YORK CENTRAL.—James E. Hawthorne, assistant vice-president, passenger sales and service department, appointed assistant vice-president, system, freight sales and service, New York.

B. J. Gordon, material engineer, New York, appointed assistant district engineer, Eastern district, Syracuse, N.Y., succeeding **J. N. Grim,** who retired August 31.

NORFOLK & PORTSMOUTH BELT LINE.—F. E. Dickerson, general superintendent, Winston-Salem Southbound, Winston-Salem, N.C., appointed president, Norfolk & Portsmouth Belt Line.

NORFOLK & WESTERN.—F. S. Morrison, assistant trainmaster, Scioto division, N&W, granted leave of absence to become general superintendent, **Winston-Salem Southbound,** Winston-Salem, N.C. **L. M. Newton,** assistant trainmaster, Pocahontas division, succeeds Mr. Morrison.

NORTHERN PACIFIC.—W. J. Galt, general agent, Butte, Mont., appointed general livestock agent, St. Paul, to replace **W. E. Husband,** resigned to become manager of the Billings Public Stockyards, Billings, Mont. **N. L. MacLean** transferred from Helena, Mont., to succeed Mr. Galt.

NORTHWESTERN UNIVERSITY.—Graduates of the first short course for transportation executives given by the Transportation Center include: **Robert W. Anderson** and **William J. Taylor, Rock Island; A. C. Dewhirst** and **Roland J. Lehman, Santa Fe; Alexander H. Hart, Canadian National; A. D. Schadt, Bessemer & Lake Erie; Charles F. Yardley, Boston & Maine; Carl E. Bullard** and **Vincent J. Tomasule, Fruit Growers Express;** and **William F. Tyler, Union Tank Car Company.**

Stanley G. Phillips
B&M

John J. Gaherin
NYNH&H

QUANAH, ACME & PACIFIC.—Stanley M. Blashuk appointed traffic manager, Quanah, Tex., succeeding **Charles R. Sherwood,** who retired August 31.

ROCK ISLAND.—E. J. Scahill, auditor of freight traffic, appointed assistant general auditor, Chicago, to succeed **Arthur P. Neill,** who retired August 31. **David Henderson** named to replace Mr. Scahill.

ROCK ISLAND.—President **Downing B. Jenks** appointed by Illinois Governor William G. Stratton to a five-man mass transportation commission authorized to study problems of congested urban areas.

SANTA FE.—N. L. Minnix appointed acting superintendent, Chicago Terminal division, Corwith, Ill., succeeding **R. D. Clousing,** on leave of absence.

SEABOARD.—John C. Holcombe appointed mail traffic manager, Norfolk, Va., succeeding **Arthur E. Bowers,** retired.

SEATRAIN LINES.—Graham M. Brush, Jr., elected vice-president—operations.

SOUTHERN.—Donald D. Strench, superintendent, Knoxville, Tenn., transferred to Atlanta, Ga., succeeding **William H. Moore** (Railway Age, Sept. 2, p. 42). **James A. Johnson,** superintendent, Hattiesburg, Miss., succeeds Mr. Strench. **Donald H. MacLeod,** assistant superintendent, Knoxville, promoted to superintendent, Charleston, S. C., succeeding **Clark Hungerford, Jr.,** transferred to Hattiesburg. **Versie R. Valentine,** trainmaster, Asheville, N. C., promoted to assistant superintendent, Knoxville.

WINSTON-SALEM SOUTHBOUND.—W. T. Rice, president, **Atlantic Coast Line,** Wilmington, N.C., elected also president, Winston-Salem Southbound. **F. S. Morrison,** assistant trainmaster, Scioto division, **Norfolk & Western,** granted leave of absence to become general superintendent, Winston-Salem Southbound, at Winston-Salem, N.C., succeeding **F. E. Dickerson,** appointed president, **Norfolk & Portsmouth Belt Line.**

OBITUARY

Herbert E. Dunham, 74, retired assistant general freight agent, **Missouri Pacific,** died August 24 in Missouri Pacific Hospital, St. Louis.

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More than 100 MILLION car miles of service plus the favorable A. A. R. High Speed Truck Test results show that your cars will meet these requirements when equipped with

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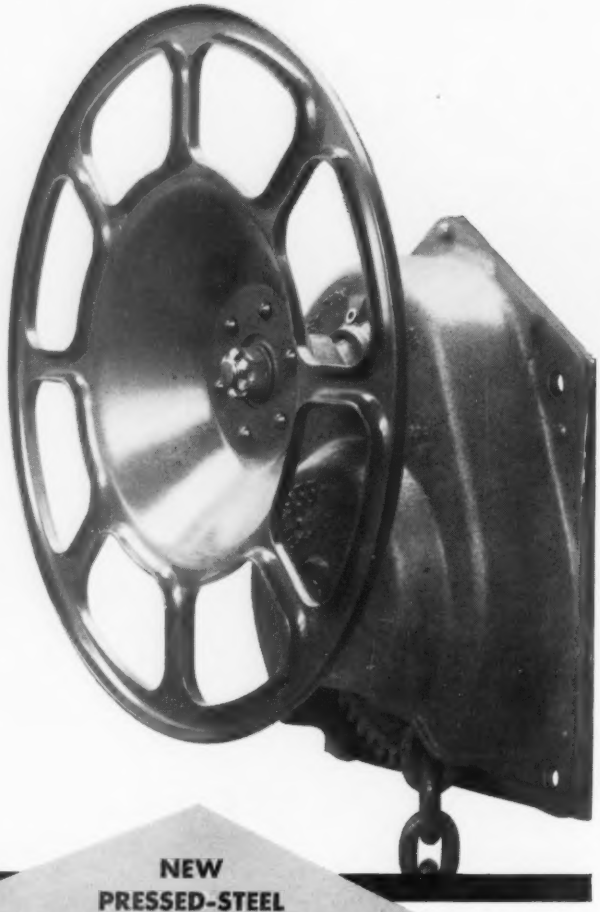

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Just the right rim size for quick, one-hand gripping . . . smooth, non-snagging, *coined edges* — here's Equipco's new pressed-steel handwheel, built for strength, for rugged stamina . . . to stay true-turning in service, free from "wobble."

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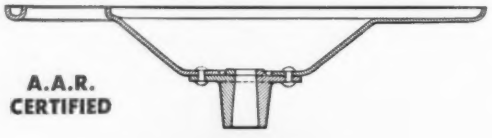

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for quick car control and safety

YOU CAN'T TELL A FREIGHT CAR BY ITS COVER!

Look to the COMPONENT PARTS for its true value . . . because a freight car is no better than its weakest component!

INTERNATIONAL'S ALL-WELDED BOX-CAR SIDES

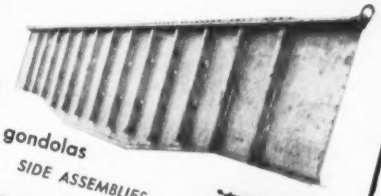
Delivered ready to assemble, to car owners who assemble their own cars. Maximum welded attachment to the side plate and side sill upper elements.

INDEX

1. unit load cars
   UNDERFRAMES, BULKHEADS, DOORS
2. box cars
   UNDERFRAMES, SIDE ASSEMBLIES, DOORS
3. bulkhead flatcars
   pulpwood cars
   piggy back cars
   UNDERFRAMES, BULKHEADS
4. gondolas
   UNDERFRAMES, SIDE ASSEMBLIES, FLOORS
5. hopper cars
   UNDERFRAMES, SIDE ASSEMBLIES, HOPPERS
6. refrigerator cars
   UNDERFRAMES, SIDE ASSEMBLIES, DOORS
7. cabooses
   UNDERFRAMES

INTERNATIONAL'S BULK-LADING SIDE DOOR

Requires no inside grain door . . . and has an access door for loading, inspection and sampling. Positive retainment on the car structure.



gondolas
SIDE ASSEMBLIES

INTERNATIONAL'S CENTER FILLER, REAR DRAFT LUGS, CENTER PLATE, one steel casting welded integrally into the bolster-center sill connections . . . International's corrective design for an ALL-WELDED UNDERFRAME which has a history of NO FAILURES!

HOPPERS

PRECISION FABRICATORS OF CORRECTIVELY DESIGNED COMPONENTS

INTERNATIONAL STEEL COMPANY
RAILWAY DIVISION

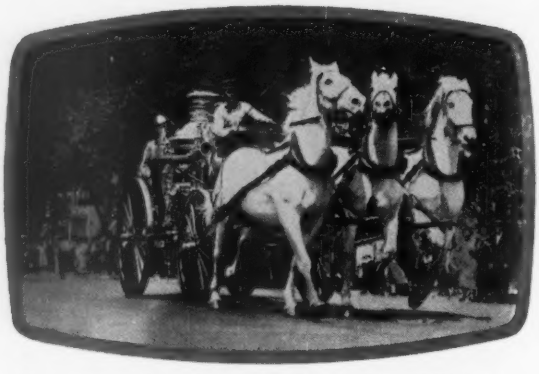
EVANSVILLE 7, INDIANA

SEE TIMKEN TELEVENTS ON NETWORK TV

Two big hour-long spectaculars this fall

Over 126 NBC STATIONS, SEPTEMBER 23rd

"Eleven Against the Ice", the story of the Antarctica Turnpike. See men and machines build a trail across Antarctica's frozen wastes—in spite of 200 mph winds, temperatures of 120 degrees below zero and crevasses big enough to swallow a 20-story building. It's a triumph of engineering and human courage, a whale of a television show.

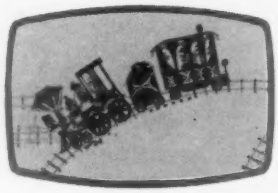


Over 142 NBC STATIONS, NOVEMBER 21st

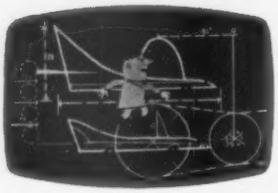
"The Innocent Years". Recaptured from exciting old films and newsreels, you'll see happy days relived. Experience the excitement of "Teddy" Roosevelt, Thomas Edison and Mark Twain in action. Hear songs like: "In the Good Old Summertime", "He'd Have to Get Out and Get Under". Enjoy the fun of family picnics, the joys of people in the last untroubled time in our history.

And commercials that help you sell . . .

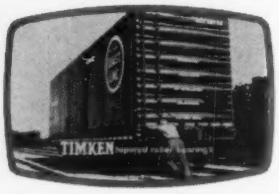
See How man stumbled on the concept of the wheel.



See Why America's railroads have always led the world.



See Why Americans jump for the latest thing in cars.



See One man push a freight car all by himself.

Years of national and trade advertising have made the name "Timken" the best-known name in bearings. People have learned to look for Timken® bearings wherever wheels and shafts turn. Shippers have learned that the railroads are switching to "Roller Freight"—using Timken bearings on freight cars. And they know that "Roller Freight" makes their shipping even more reliable—making Timken bearings a big plus in railroad freight sales. Now network television will build an even greater awareness of Timken bearings—make them a bigger plus in gaining business for the railroads. The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".

TIMKEN TAPERED ROLLER BEARINGS

TRADE-MARK REG. U. S. PAT. OFF.

MARKET OUTLOOK *at a glance*

Freight Car Loadings

Loadings of revenue freight in the week ended August 31 were not available when this issue of Railway Age went to press.

Loadings of revenue freight for the week ended August 24 totaled 759,140 cars; the summary, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, August 24

District	1957	1956	1955
Eastern	117,349	119,932	120,047
Allegheny	143,568	150,076	152,015
Pocahontas	65,930	63,711	62,226
Southern	124,042	125,388	125,988
Northwestern	128,758	124,970	139,049
Central Western	125,150	128,047	129,423
Southwestern	54,343	58,289	58,523
Total Western Districts	308,251	311,306	326,995
Total All Roads	759,140	770,413	787,272
Commodities:			
Grain and grain products	53,290	54,240	51,353
Livestock	6,250	10,163	7,786
Coal	137,760	139,172	132,525
Coke	11,037	11,226	12,330
Forest Products	43,443	49,426	48,290
Ore	85,332	73,125	90,388
Merchandise l.c.l.	55,112	61,618	63,311
Miscellaneous	366,916	371,443	381,289
August 24	759,140	770,413	787,272
August 17	750,640	769,644	775,701
August 10	740,471	715,207	770,251
August 3	740,711	660,287	760,387
July 27	736,407	649,806	790,426
Cumulative total, 34 weeks	23,539,563	24,241,180	23,989,169

IN CANADA.—Carloadings for the seven-day period ended August 21 totaled 86,368 cars, compared with 83,371 cars for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
August 21, 1957	86,368	31,755
August 21, 1956	93,859	31,826
Cumulative Totals:		
August 21, 1957	2,569,265	1,071,419
August 21, 1956	2,782,937	1,119,319

New Equipment

► *Diesel Fleet Continues Growth.*—There were 26,937 diesel units on Class I roads August 1, an increase of 96 since July 1 and 1,199 since August 1, 1956; steam fleet was down to 3,037, according to AAR report summarized below.

	Owned or Leased August 1		Stored Serviceable August 1		Waiting Shop August 1	
	1957	1956	1957	1956	1957	1956
Diesel (Units)	26,937	25,738	41	219	1,005	920
Steam (Locomotives)	3,037	4,489	832	678	550	740
Electric (Units)	611	607	16	8	81	80

► *Repair Ratio Rising.*— With 85,396 cars held for repairs out of a Class I fleet totaling 1,730,743, repair ratio on August 1 was slightly higher than on July 1, when it stood at 4.5%, AAR report summarized below shows; comparable figure for August 1, 1956, was also 4.5%.

	Aug. 1, 1957	Aug. 1, 1956	Change
Car ownership	1,730,743	1,703,674	+27,069
Waiting Repairs	85,396	77,490	+ 7,906
Repair Ratio	4.9%	4.5%	+ 0.4%

► *Rock Island.*—Will build in its own shops, for first quarter 1958 delivery, 100 50-ton flat cars; 50 cars, with riveted frames, will cost an estimated $8,576 each, and the other 50, with cast steel frames, will cost an estimated $10,182 each.

Purchases & Inventories

► *Six Months' Purchases Up 3.4%.*—Purchases by domestic railroads of all types of materials in this year's first six months were $42,442,000, or 3.4%, higher than in comparable 1956 period; purchase and inventory estimates in following tables were prepared by Railway Age.

PURCHASES*

	June 1957	Six Months 1957	Six Months 1956
	(000)	(000)	(000)
Equipment**	$ 47,205	$ 315,265	$ 252,786
Rail	10,420	64,315	52,791
Crossties	7,101	43,319	37,945
Other Material	106,725	634,268	653,009
Total from Manufacturers	$171,451	$1,057,167	$ 996,531
Fuel	32,232	222,678	240,872
Grand Total	$203,683	$1,279,845	$1,237,403

* Subject to revision.
** Estimated value of orders.

INVENTORIES*†

	June 1, 1957	June 1, 1956
	(000)	(000)
Rail	$ 62,058	$ 55,014
Crossties	97,993	88,344
Other Material	551,511	549,038
Scrap	22,975	18,755
Fuel	29,736	29,044
Total	$764,273	$740 195

* Subject to revision.
† All total inventory figures taken from ICC statement M-125 for month indicated.

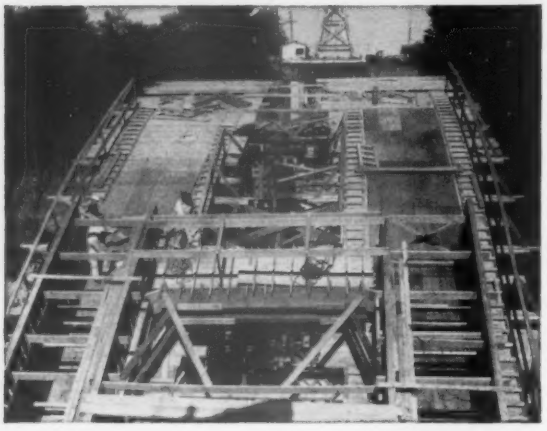
a RAILWAY AGE time-saver page

SMOOTH

When the B & O specified fir plywood for interior caboose rebuilding, the smooth, easy-to-paint surface alone justified the switch from pine tongue-and-groove lumber. Fir plywood provided other advantages, too: less heat loss in the cars, a 90% reduction in the number of pieces to be handled and about 50% less maintenance. Adopted in 1955, fir plywood is used for interior walls, ceilings, bunks, lockers, table tops and seats.

DURABLE

Exterior fir plywood and overlaid plywood are preferred for every type of sign: traffic control, right-of-way, advertising, identification. One reason is the proven durability of fir plywood, here being given one of a series of vandalism tests. Compared to steel and aluminum, plywood suffered less initial damage, virtually no progressive deterioration. Other advantages: rigidity, workability, weather-resistance, excellent paint-holding.



LOW COST

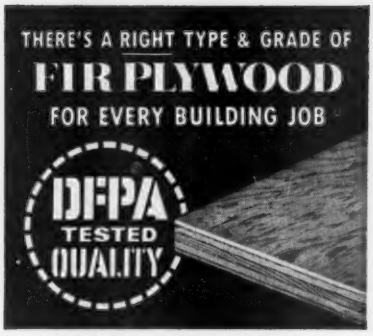
Fir plywood concrete forms cut costs four ways: through faster fabrication, multiple re-use, easier stripping, smoother concrete that requires less finishing. The latter was particularly important in construction of this 564-foot arch rib bridge spanning branch tracks of the Milwaukee Railroad. Plywood forms provide design adaptability, too; smooth monolithic surfaces, curves, and special ornamental effects are easily achieved.

DFPA TESTED QUALITY

FIR PLYWOOD

means quality construction

FOR MORE INFORMATION about uses shown above, design and/or specification data, mail coupon ⟶



1. SPECIFY BY DFPA QUALITY TRADEMARKS

DFPA grade-trademarks appear only on plywood manufactured, inspected and scientifically tested under the DFPA quality control program. DFPA, Douglas Fir Plywood Association, is a non-profit industry organization devoted to product research, promotion and quality maintenance.

2. CHOOSE THE RIGHT GRADE FOR EACH JOB

Fir plywood comes in two types: 1. *Exterior* (waterproof glue for permanent exposure to water or weather); 2. *Interior* (moisture-resistant glue) for indoor uses, crating, sheathing, maintenance. Within each type are several grades – i.e., panels with one good side, two good sides. Most popular grades are shown below.

EXT-DFPA

Exterior plywood for permanent outdoor uses

PLYPANEL

PlyPanel® for paneling, most indoor uses

PLYSCORD

PlyScord® is unsanded panel for sheathing, crating, bins, etc.

PLYFORM PLYFORM

PlyForm® concrete form grades come in Exterior and Interior types.

SPECIALTY PANELS include 1. *Overlaid Exterior plywood* (hard, smooth, abrasion-resistant fused resin-fiber surfaces) for siding, signs, tanks, concrete forms; 2. *Textured panels* with smart grooved, brushed or striated surfaces for fixtures, siding, special decorative effects.

DOUGLAS FIR PLYWOOD ASSOCIATION
Tacoma 2, Wash. (Good U.S.A. Only) Dept. 192

☐ Please send basic fir plywood specification data.

☐ Also send information about use of fir plywood

for.....

Name_____

Firm_____

Address_____

City_____ Zone____ State_____

'General Promotion' Ads

(Continued from page 46)

press the traveling and shipping public. The amounts spent by truck firms engaged in moving household goods was, for example, quite heavy. As the accompanying chart shows, such advertising in magazines ran close to $1 million in this field alone.

Dollar totals in the chart do not include a very important facet of "air" advertising which warrants special mention. Big equipment makers that sell to airlines frequently use expensive ad schedules in consumer magazines to promote air carriers using their requirement. When such ads plug the speed, safety or comfort of the equipment —which they often do—there is undoubterly a substantial spill-over benefit to the airlines as well.

An example of how this works is easy to find. When Capital and Trans-Canada Airlines purchased turbo-prop Viscount planes from Vickers of England, the manufacturer earmarked $156,000 for magazine promotion in this country in 1956. That sum was exceeded by only four railroads in magazine passenger promotion during the year. Altogether, equipment manufacturers spent $3.3 million in magazines last year to tell the traveling public that air travel is as modern as tomorrow.

Railroad equipment manufacturers, from time to time, have undertaken somewhat similar promotion on behalf of railroads, although necessarily on a less impressive scale. The Railway Progress Institute now provides a medium to do such a job and RPI's interest in the subject is well known. A number of individual suppliers already undertake "support advertising" programs, and each year the Association of Railroad Advertising Managers presents a "Golden Spike" award to the firm turning in the best job during the year.

Looking back at the magazine campaigns waged by the railroad industry in 1956, three observations seem pertinent:

1. No single railroad is national in scope, yet railroads make a heavy investment in magazine advertising which is nationwide in impact. The basis for this is that no railroad operates as an "island" but all are part of the national rail network.

2. Although there are three big coast-to-coast air carriers, most air advertising is concentrated in newspapers in selected markets and is devoted almost exclusively to passenger solicitation.

3. While railroad men are sometimes criticized in print for apparent inattention to passenger service, the record shows that rail carriers are spending more money on passenger solicitation (at least in magazines) than they are for new freight traffic.

there's so much to choose from at...

HOTEL CLEVELAND

Cleveland Room
Dine in the splendid old world setting of a grand dining room. The menu is varied, the service unexcelled.

Bronze Room
One of the brightest of the city's supper clubs. Dancing nightly from 9:00 p.m.
Air conditioned, of course.

Rib Room
A true specialty restaurant
For Fabulous Roast Beef, roasted, carved and served to your order.

MEN'S BAR
Strictly stag — is this all male haven for good drinks, good food and good talk.
Plus sports events on TV.

TRANSIT BAR
For *rapid* service in the most unique bar in the country . . decorated with an outstanding collection of miniature trains.

the PATIO
Pause — in the relaxing, informal atmosphere of the gayly decorated Patio. It's a Cleveland habit to say — "Meet me at the Patio."

Coffee Shop
Service is brisk and decor cheerful in the modern, air-conditioned coffee shop. Enjoy a tasty sandwich or a moderately priced meal.

Hotel Cleveland
CLEVELAND, OHIO

WRITE OR CALL FOR YOUR RESERVATIONS NOW

(Continued from page 62)

PERIODICAL ARTICLES

ARCHIV FÜR EISENBAHNWESEN, April 1957. Springer-Verlag, Reichpietschufer 20, Berlin W 35, Germany. 66 German marks per year; single copies, 12 German marks.

After a lapse of 15 years publication of this magazine has been resumed on a bi-monthly basis. It has been the standard work on railroads in Germany since 1878 and is published for the Deutsche Bundesbahn (Ministry of Railways) by Springer-Verlag. It contains articles, book reviews, and a section on laws and regulations for German railways and transport companies.

●

BEN HEINEMAN'S VERY SPECIAL SITUATION, by Carl Rieser. Fortune, September 1957, pp. 170, et seq. Time Inc., 9 Rockefeller Plaza, New York 20. Single copies, $1.25.

Railroaders shook their heads when lawyer Ben Heineman took over the near-bankrupt Chicago & North Western. In a little over a year he has put the line back on its feet—and given railroaders some new ideas.

●

TRANSPORT AGE. British Transport Commission, 222 Marylbone road, London, N.W.1.

A new quarterly, the main purpose of which will be to help to interpret British Transport and its customers to one another and to foster mutual knowledge and understanding.

ANNUALS

34TH ANNUAL RAILROAD GREEN BOOK. 12 pages, illustrated, charts. National Safety Council, 425 North Michigan Avenue, Chicago 11, Ill.

Winners and records of all participants in the 30th Railroad Employees' National Safety Award tabulations are listed in the National Safety Council's annual Green Book. The statistical breakdown covers safety performance of 104 Class I roads, 33 switching and terminal companies, 13 roads participating for the first time in 1956, and five regions and five shops of the Pullman group. Other charts summarize safety records, 1923-56, and estimated reductions in reportable casualties, 1924-56. Statistical data used in the report was furnished by the ICC. (Winners were listed in Railway Age, June 24, p. 15.)

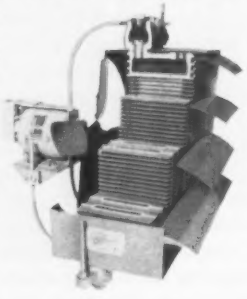
●

70TH ANNUAL REPORT OF TRANSPORT STATISTICS IN THE UNITED STATES FOR THE YEAR ENDED DECEMBER 31, 1956, prepared by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Available from Government Printing Office, Washington 25, D.C. $3.25.

The major portion of Part I covering railroads, their lessors and proprietory companies, has just been released. Additional portions and parts will be released upon completion.

*ends Unit Heater Maintenance Problems!

Your answer to unit heater problems railroads have discovered through common failures of copper, aluminum, and steel tube heat transfer surface. GRID condenser eliminates internal electrolytic corrosion—because all metals in contact with steam are similar. GRID also eliminates external corrosion—because the cast iron construction resists acid or other fumes in the air and eliminates the use of reducing valves where high steam pressure is used. GRID cast iron construction is tested to withstand steam pressures up to 250 P.S.I. . . . 450° temperature. GRID is built to last for years . . . uninterrupted service records of more than twenty years are common among GRID users on railroads throughout the North American continent.



Cut-away view of Model 2000 GRID Unit Heater . . . note double steam chambers in each fin section and wide fin spacing . . . fins are cast integral with steam chamber.

Send for the complete story on GRID Unit Heaters, GRID Blast Heaters, and GRID Radiation for railroad use . . . it is contained in GRID Products Catalog No. 956. Write today for your copy.

D. J. MURRAY MANUFACTURING CO.

MANUFACTURERS SINCE 1883
WAUSAU, WISCONSIN

Supply Trade

Robert E. Killian, formerly with the Ramapo Ajax and Railroad Products Divisions of **American Brake Shoe Company,** has joined the **Ralph W. Payne Company** as sales representative.

John T. Degnan, formerly assistant to vice-president of **Rail Joint Company,** recently joined **Oakite Products, Inc.,** and has been assigned as special railway representative at Chicago.

Byron A. Haney, sales representative in the New England area for **Bucyrus-Erie Company,** has been appointed northwestern sales manager at Seattle. He succeeds **Robert P. Brooks,** who has been promoted to assistant sales manager, large machines and blast hole drills, at South Milwaukee, Wis.

Corrulux Division of **L-O-F Glass Fibers Company** has appointed **Gordon E. Walls** northeast regional sales manager, at New York. Three new district sales managers have also been named: **William G. Catchcart, Jr.,** at Chicago; **Fred A. Laake, Jr.,** at Dayton, Ohio; and **Henry B. Selby,** at Charlotte, N. C.

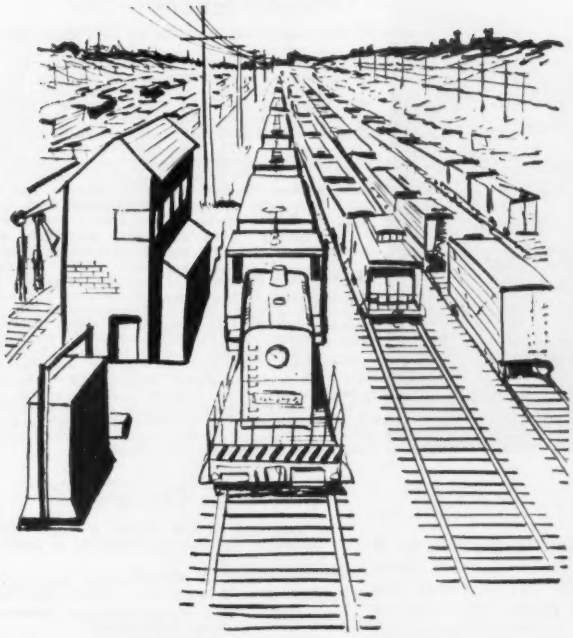
Fred C. Neuls has been named a vice-president of **Hertz Rent A Car System,** in charge of all car rental concessions. He was formerly president of **Abbey Rentals, Inc.,** acquired by Hertz early this year.

Robert N. Scott, executive vice-president of **Fiannery Manufacturing Company** and **Fort Pitt Manufacturing Company,** has been elected president of both companies.

William A. Callison, a vice-president of **Alco Products, Inc.,** has taken over direction of the company's national accounts. His headquarters are in Chicago to facilitate dealings with all national accounts involving products of Alco's four divisions. The following appointments in the spring and forge division have also been announced: **John M. Howard, Jr.,** manager of the Latrobe, Pa., plant, named general manager of the division, with headquarters at Latrobe. **Marshall D. Raymond,** central regional manager at Cleveland, named marketing manager, also at Latrobe. He has been succeeded at Cleveland by **Robert W. Pittman,** regional manager for Alco on the Pacific coast, at San Francisco, who, in turn, has been succeeded by **E. J. Brown,** district manager in Chicago for Alco's spring and forge products.

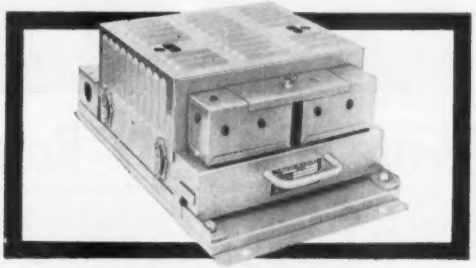
John C. Harrington, president of **National Forge & Ordnance Company,** has been elected board chairman. **Robert O. Wilder,** executive vice-president, has succeeded to the presidency, and **Duane E. Wilder,** secretary-treasurer, has assumed the additional duties of vice-president.

In communications—



Only independent AC power will give you communications safety

Here's why: Railroad communications equipment designed to operate directly from an AC line is more dependable and lower in first cost. Cornell-Dubilier Inverters will power these units from *any* standard battery source — and keep them in operation *even when a vibrator becomes exhausted.* Because C-D Inverters have *two* vibrators. The second kicks in instantly when the first reaches the end of its useful life. Cornell-Dubilier has *doubled* vibrator life in five years! That means trouble-free communications, day after day. For complete technical data on economical conversion from 12V., 32V., 64V., and 120V. D-C to 110V. A-C, write to Cornell-Dubilier Electric Corporation, Department **9,** 2900 Columbia Avenue, Indianapolis, Indiana.

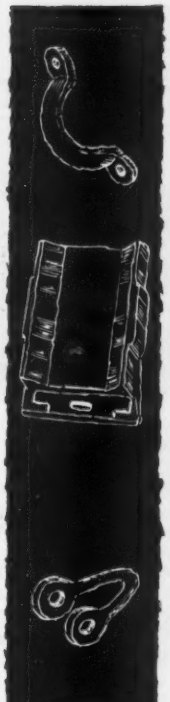


CORNELL-DUBILIER

VIBRATOR INVERTER

The railroad-proven radio power supply first choice of experienced railroad men.

FORGED by PITTSBURGH



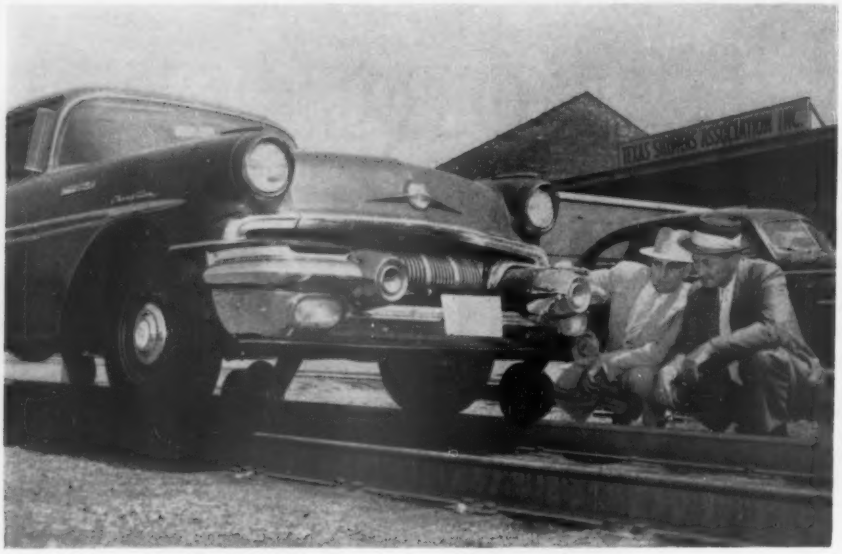
FORGED by PITTSBURGH for ARC WELDING

This newly developed brake jaw was designed to permit arc welding of the brake jaw to the brake rod. No welding fixtures are necessary because the jaw holds the rod in the exact position while welding. Furthermore, the design was specifically tested to provide the proper amount of welded area. The strength of welds applied in the weld pockets will equal the strength of the maximum (1⅛) diameter rod inserted.

Other features include the carefully designed side arm and eye which meet A.A.R. requirements. Incidently, all holes are drilled to customer specification. All these features combine to make this new forged brake jaw an attractive part for either maintenance or new equipment applications.

For additional information on other railroad forgings, request bulletin No. 5205, "Freight Car Forgings."

PITTSBURGH FORGINGS COMPANY
CORAOPOLIS, PA.



C&EI Equipped With Hy-Rail Inspection Car

Chicago & Eastern Illinois officers can now inspect their road by station wagon—a new 1957 Pontiac equipped with retractable flanged guide wheels under the chassis. C. G. Rodgers, C&EI vice-president and general manager, and Herbert Huffman, engineer in charge of maintenance, are shown inspecting the mechanism after the car has been placed on the rails. The flanged wheels are held in position by a separate mechanical lock, operated from outside the car. While car is riding the rails (top speed, 45 mph), the steering wheel is locked. The railroad's latest inspection vehicle—the A34 Hy-Rail inspection motor car — is manufactured by Fairmont Railway Motors, Fairmont, Minn.

FACTS & FIGURES
at a glance

Organizations

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS—Program of the Land Transportation Committee, which will meet October 9 during the fall general meeting of the AIEE, at the Morrison Hotel, Chicago, includes papers on "Technical Aspects of Providing Service to Single Phase 60 Cycle Railroad Loads," by T. J. Nagel and A. F. Gabrielle, American Gas & Electric Service Corp.; "Electric Equipment for MTA High Performance Cars," by M. F. Bretz, General Electric Company; "Electri Locomotives for the Butte, Anaconda & Pacific," by W. M. Wishart, General Electric Company; and "Electric Snowmelter Systems for Railroad Track Switches," by D. R. Brewer, Geieral Electric Company.

GREAT LAKES REGIONAL ADVISORY BOARD.—"Car Efficiency" will be the theme of the 100th regular session, September 26-27, at the Hotel Statler, Buffalo, N.Y. Perry M. Shoemaker, president of the Lackawanna, will address a luncheon on the 27th; his subject, "Transportation Ahead." Special features to celebrate the 100th session will include a "Careful Car Handling" meeting of the Central Railway Club of Buffalo at 8 p.m., on the 25th; a "breakfast get-together" under the direction of George Gatecliff, Detroit Gas Company traffic manager, and chairman of the advisory board's recently revived Passenger Service Committee; and a discussion of the relation of mail contracts, and maintenance of rail passenger service, at the general business session on the 27th.

Dividends Declared

CHICAGO SOUTH SHORE & SOUTH BEND.—15¢, quarterly, payable September 16 to holders of record September 5.

DELAWARE & HUDSON.—50¢, quarterly, payable September 28 to holders of record September 11.

ERIE.— 25¢, reduced, payable September 30 to holders of record September 6.

READING.—4% second preferred, 50¢, quarterly, payable October 10 to holders of record September 19.

UNION PACIFIC.—common, 30¢, quarterly; 4% preferred, 20¢, semiannual, both payable October 1 to holders of record September 9.

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Automation—Key to Prosperity

The future of the railroads — like that of all other industries—depends on the degree to which they go forward with what, nowadays, is called "automation."

In essence, what automation means is producing more units of product per hour of labor. This is practically never accomplished through "greater efficiency" or harder work by employees —but almost always by the adoption of improved machinery or methods.

The products of the industries that go farthest with automation become progressively lower in price, in relation to products of industries with little automation. Hence it is that industries with the most attention to automation are the ones most likely to expand and prosper; and have jobs for more people in future.

There is nothing new about automation except the term itself. A century ago, when locomotive builders produced locomotives which would pull 10 cars instead of 5, railroad automation was well on its way. If it were not for this kind of automation on the railroads—and trains were still limited to 5 little cars—the railroads would now be out of business.

Automation doesn't destroy railroad jobs—except, perhaps, temporarily sometimes. On the contrary, it is only automation that can make employment in any industry secure—by keeping the cost of its products competitive with the products of other industry.

•

When automation is mentioned in connection with railroads, most people think of "automatic" yards or electronic data-processing equipment. These developments are automation, all right—but there are a lot of other kinds that are equally important, because they are accomplishing the same wholesome result, viz., more ton-miles and passenger-miles per hour of labor.

Some people wonder how the airlines have done so well—because, superficially, theirs appears to be a highly individualized service, like barbering or serving diners in a restaurant. But output per crew has risen.

Plane crews work a standard number of hours a month. During the past decade the average capacity and passengers per plane have risen; and average speed has gone up, not just because planes fly faster, but because more planes are operated without intermediate stops. The result is that passenger-miles per crew-hour have risen spectacularly, and plane fares have been kept relatively low. Subsidies have helped the airlines a lot, of course, but an even bigger factor, probably, in their ability to keep their fares competitively low has been the fact that they pay their employees according to hours flown and not according to miles traversed, as railroads do.

1,000 VARIETIES: Consolidation of railroads into fewer competing systems, the substitution of trucks for package handling by local freight trains, "incentive rates" to induce heavier loading of cars, "agreed charges" to promote more regular patronage of railroad service, "piggybacking" to reduce cost of switching in "retail" quantities, discontinuance of stations and services which do not attract enough traffic to pay expenses, labor-saving methods in mechanical and track maintenance—all these are varieties of automation that the railroads are carrying forward. All that's wrong about automation on the railroads is that there isn't even more of it going on than there is. And that railroad people don't talk more openly and proudly about it than they do.

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